

# THE LITERARY AETUM

Journal of English and Foreign Literature, Science, and the Fine Arts.

No. 1406.

LONDON, SATURDAY, OCTOBER 7, 1854.

PRICE  
FOURPENCE  
Stamped Edition, 5d.

## MINERALOGY.—KING'S COLLEGE,

LONDON.—Lectures on MINERALOGY, will commence a course of LECTURES on MINERALOGY, with a view to facilitate the study of GEOLOGY, and of the application of Mineral Substances in the ARTS. The Lectures will be illustrated by an extensive Collection of Specimens, and will begin on FRIDAY, October 6, at Nine o'clock, A.M. They will be continued on each succeeding Wednesday and Friday at the same hour.

W. W. JELF, D.D., Principal.

## OWENS COLLEGE, MANCHESTER

(in connexion with the University of London.) SESSION 1854-5.—The COLLEGE WILL OPEN for the Session 1854-5, on MONDAY, the 9th day of OCTOBER next, and the Examination, previous to the admission of proposing Students, will commence on that day, and be continued on the following days, at 10 o'clock A.M. at the College. The Session will terminate in July, 1855. For a statement of the Courses of Instruction which will be given in the several Departments, see Advertisement published in the Aetum of the 16th instant.

Further particulars relating to the courses, and terms of instruction, and the conditions upon which the Scholarships and Prizes founded in connexion with the College may be completed, for will be furnished in a Prospectus, which may be had from Mr. Nicolson, of the College, Quay-street, Manchester, where application may be made to the Principal, on and after the 3rd day of October, daily, between the hours of 10 and 4.

BARLOW & ASTON, Solicitors to the Trustees, September 28, 1854. Town Hall-buildings, Manchester.

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The following are now at Press, and will appear shortly:—

India in the Fifteenth Century; comprising the Narrative of Abd-ur-Rasak, Ambassador to the Court of the King of Basmor, from Shah Rukh, son of Tamerlane, in 1401; to which is added, Nihit's Narrative of his Travels in India in 1400-75. Translated from the Russian MS., with Notes, by Count Wicherath; and the Travels of the Venetian Niccolò Conti and Giorgio de San Stefano, translated from the original Latin, and from the Italian of Ramusio, by J. WINTER JONES, Esq., of the British Museum.

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LONDON, SATURDAY, OCTOBER 7, 1854.

## REVIEWS

*The English Prisoners in Russia. A Personal Narrative of the First Lieutenant of H.M.S. Tiger; together with an Account of his Journey in Russia, and his Interview with the Emperor Nicholas and the principal Persons in the Empire.* By Alfred Royer, Lieut. R.N. Chapman & Hall.

Lieut. Royer, an officer of the *Tiger*—which grounded near Odessa—has published in this volume a narrative of his adventures. As the first of many new stories that may be expected about captives and their captivities, his relation will be read with curiosity; and it will be found the more amusing because he tells, in so simple a manner, what he thought of Russia, of the Emperor, of the Grand Duke and the Grand Duchess, of the Palaces, and of the people who live in them and out of them. His candour will appear to some the caution of a prisoner on parole who had to go back with his book to the Czar, and take the consequences of every word he had written. But this he could not help. The love of scene-painting is strong within him. He retains an enviable faculty of believing in theatrical illusions, and was so bewildered by the elegant affability displayed at Peterhoff, that he came away thinking there was not such a nice set of people in the world as the Russian Imperial family. But then there were several reasons why he should think so. He was kissed on both cheeks by a Baron—general officers were polite to him—the Minister of War held his hand while he talked to him—he had his own “aide-de-camp”—the Grand Duchess herself presented him with a newspaper—three Grand Dukes put him “quite at ease”—and the Emperor actually condescended to laugh in his face. These circumstances constituted, at least for Lieut. Royer, materials quite sufficient for a new faith, and accordingly a rosy glow suffuses all the sketches and portraits he has drawn of his captivators.

The *Tiger* lay under a cloud of black fog on a sand-bank. A high shore was within 150 yards of her, and the “goodlie companie” on board could discern a Cossack’s lance and two pink parasols on the top of a cliff. Men and cannon, however, were fast collected, and while the ship creaked as 150 sailors hauled vainly at her cables, a heavy battery was planted amid the flower-beds of the Mayor of Odessa’s garden, and began to pour hot shot upon her. She was fixed on the shoal, yet her officers would not at first surrender. A single gun was brought to bear on the enemy; and, now and then, as the pink parasols were mistaken for the colours of new battalions, two or three riflemen aimed at them; but it was a hopeless situation, and after a couple of hours the Captain very properly struck his flag. As the crew was landed, two British steam-vessels arrived to the rescue. The English sailor and the Russian soldier were here brought into contrast.—

“The officers on board the steamers could not distinguish, in the crowd on the beach, their fellow-countrymen, who were bravely carrying up the wounded in the midst of a shower of shells, which burst in all directions: to avoid which, the Russians had been trained to lie down flat, on a signal being given them to do so; and occasionally the remarkable scene was exhibited, of the jolly tars proceeding on their route up the cliff, regardless of the explosions and shot from the ships, whilst several thousand Russians were lying flat on their faces.”

General Osten Sacken, after his prisoners were securely ensconced in quarantine, played a little part of his own, which Lieut. Royer thought, of course, was very much like life.—

“General Osten Sacken paid daily visits to the Captain and officers, and to the hospital. He was much gratified at seeing William Tanner (who had been wounded, and who recovered) occupied, whenever he visited him, in reading his Bible; and he expressed great approbation of his conduct, being himself of a religious turn of mind. Indeed, such were his kindly feelings and his religious tendency of thought, that he never visited the establishment without going to the graves of his enemies, where, absorbed in meditation, he might be seen crossing himself and offering up prayer to the Lord of Hosts.”

The curtain being thus drawn up, and the right sort of reporter at hand, a Russian drama was forthwith enacted. Ladies brought flowers and threw them to the prisoners; a sentry made no complaint when a glass of water was thrown over his head; and the magnanimity of Paladins was exhibited by gentlemen in spiked helmets and long grey coats. Some of their less humanized notions, nevertheless, peeped out occasionally from beneath this fascinating decorum.—

“Signor Cambiaggio called, by desire of General Osten Sacken, to inquire whether he had decapitated the pilot of our ship for having run her ashore. We could scarcely understand what he meant, until he explained himself by stating that a headless body had been found after we had left the ship, dressed in an English sailor’s clothes. Nothing had been said on the subject until, about a week after, the head was discovered in another part of the vessel. Signor Cambiaggio expressed a kind of apology on the part of the General for making the inquiry; he said that, of course we had every right to exercise the powers which our laws might grant in decapitating the man; all he was desirous of knowing was, whether such had been the case. We assured him that this could not be, and that it must have been the body of some one who, having been successful in robbing the vessel, had returned to it in the garments he had contrived to carry off, and in search of fresh plunder; he must have been overpowered by some competitor, who had killed and decapitated him. It was some time before the Russian authorities could bring their minds to accede to this explanation. All that we could do we did, by pointing out the pilot, who was a Turk, and was in quarantine with us; and to certify that none of our men were missing. Still we were constantly cross-questioned on the subject by other Russian officers, who apprehended that we had some object in concealing the fact.”

Very soon the impressive mind of our First Lieutenant was won by the blandishments of Barons and field-officers. He began to doubt whether Russia or Turkey deserved most sympathy. The following reads oddly in the journal of an officer employed to defend the Turks against the heroes of Sinope.—

“The conduct of our civilized enemies afforded a striking contrast to that of our barbarous allies, to whose assistance our country has generously proceeded. While staying at Constantinople we were often spat upon in the streets by the Turkish children, who certainly would not have felt such an abhorrence of us, if it had not been instilled into them by their parents, who no doubt expressed in private the feelings which were thus aped and reflected by their little counterparts.”

But then, says the prisoner of war, at the opera,—

“we had the satisfaction of looking at the ladies through the identical opera-glass that had been used by his Excellency Osten Sacken, when watching the progress of the attack on the luckless *Tiger*.”

What a delightful idea! Yet, among the Lieutenant’s notices of “our civilized enemies,” there are some which imply a little barbarism.—

“The indifference of the people of this country, generally, to the use of water, appeared to me most singular; indeed, I have sometimes fancied that they have an objection to it, for, instead of properly washing themselves, I have often seen them satisfied with taking a mouthful of the element, which they would spurt out upon their hands and then rub over their faces.”

Again, the coachman who drove him to Moscow seems to have been a savage in Russia, and a coward in Poland. Does Lieut. Royer admire or compassionate the “naturally religious” tendency which disposes the Russians “to reverence everything that is sacred, and appear to feel a superstitious awe towards whatever is respected by others”? However, the Emperor’s officials knew what kind of a story their visitor would tell, and so they pressed him to record his observations. They said, at St. Petersburg:—

“1st. That I was at liberty to go anywhere I pleased about the city, but was always to be accompanied by an officer. 2nd. That I was not to communicate with any English subjects, except the Rev. Dr. Law, the Chaplain to the Embassy at St. Petersburg. 3rd. I was allowed to have any books or papers I chose to ask for, but all letters that I wrote or received were to pass through the office of the Commander-in-Chief.—To crown their liberality, the Colonel produced a portfolio, with pen, ink, and paper, which he placed on the table, recommending me to make notes of my residence in Russia.”

They were quite right in supposing he would not make a bad use of his ink, for, on the road to Moscow, “a natural delicacy” prevented him from “keeping any strict account, particularly of places not marked upon the postal maps supplied by the Government.” He would not even remember a road-side station unless under the Imperial sanction.

Approaching personages cast their light before them. People who amuse themselves in the gardens at St. Petersburg actually do not feel their “hilarity diminished,” that is, they are not even slightly paralyzed, “by being under the immediate eye of the Emperor.”—We learn that the Empress once condescended to turn some good folks out of a pavilion, which she desired to use.—

“As an instance of the close contact into which the people are sometimes brought with the Imperial Family and the Court, who are by no means hedged in by restrictive formalities, I may state that it came to my knowledge, that, on one occasion, a lady having taken possession of a kiosk, where she intended to dine with her children, the servants of the Palace informed her that the Empress had determined on occupying the place for the day, and politely requested her to move to another part of the ground.”

It is not stated how grateful the lady was; but the captive Lieutenant, being ushered into a ducal drawing-room, noticed how elegantly careless was the disposal of upholstery. Here follows an important scene:—

“I was standing, leaning over a chair and looking out of a window, with my back to the door, when I heard these words, in a pleasing tone and in good English, with a slight foreign accent:—‘You are waiting for the Grand Duke, I suppose?’—I turned round, and, a little to my confusion, saw three ladies standing close by me. I bowed respectfully to the lady in advance, and replied that I had been directed to meet his Imperial Highness at eight o’clock. The Grand Duchess, for it was no other who now honoured me with her conversation, was accompanied by two of her ladies-in-waiting. Her Imperial Highness said she had heard of my having been very unwell, and expressed a hope that I was better. I replied, that I had only risen from my bed in obedience to the commands of the Grand Duke. Her Imperial Highness then informed me that it was uncertain when the Grand Duke would return; and added, in the most naïf manner, that I might know who was addressing me, ‘Even I do not know, and I am his wife!’ I again bowed, when she said that she should certainly hear if he was detained, and would let me know; she recommended me, in the meanwhile, to wait, saying that she would send me some tea, and the last English newspaper, which had just come to hand. She then retired, with her attendants, by the door at which she had entered, and soon after

returned alone, with a copy of the *Illustrated London News*, which she handed to me, saying, 'See! it has not yet been opened, and is the last number received.'

Two tea-pots were next brought in, followed by the Grand Duke. His Imperial Highness (the Lieutenant always writes His or Her Imperial Highness or Majesty), "motioned" the English gentleman—how pleasant to be "motioned"!—into a cabinet, where he asked him to sit down, took wine on a "separate table," smoked and talked.

"I was much pleased with the ingenuous manner in which the Grand Duke Constantine spoke of the exploits of the Arrogant and Hecla. He said, 'Have you heard what your countrymen have done?' I replied that I had not. 'Well,' said his Imperial Highness, 'of all bold and seamanlike operations, this of Captain Hall's—taking his steamer seven miles up a creek of intricate navigation, in an enemy's country—is the most daring I could have imagined; I cannot but admire such gallantry, even in an enemy.'

On the way home,—

"When we reached the palace, we observed a drosky near the gate, and, at a little distance from it, a tall figure in military uniform, wearing a long cloak and a white cap. 'There,' said Mr. Sharnan, 'is the Emperor!' We passed on; and this was my first view of His Imperial Majesty the Emperor of all the Russias. He was quite unattended; and my companion assured me that it was His Majesty's custom often to take his walks alone, at night, about the grounds."

At last, on the morning of the 25th of June, 1854, at half-past ten precisely, he was shown into an ante-room, which—

"was of great dimensions, and presented a remarkable appearance, which I had not observed elsewhere in the rooms of this or any other palace. The walls were covered, from the very top to within five feet of the floor, with paintings of full-sized female faces, in all attitudes, and with every variety of expression. These paintings were in oil, barely three feet by two, placed close together, and without frames, as if let into the wall; the whole had a very pleasing appearance. Prince Lichtenstein, one of the Emperor's aides-de-camp, introduced himself to me, speaking very good English, and kindly begged I would apply to him in case I should require anything during my stay in Russia. Several other officers addressed me, whose names I cannot remember: some spoke French, some English; but all were assiduous in their endeavours to set me at ease by their polite attentions. While waiting in the ante-room, two fine young men, evidently very tall for their age, and dressed in generals' uniform, accosted me in excellent English. As I was talking to them, answering their questions, Prince Dolgorouki summoned me to the Emperor's presence; nor did I know till afterwards that they were the two youngest of the Grand Dukes, Nicholas and Michael, who had honoured me with their attention. Their questions were such as a kind interest dictated, and merely referred to my stay in Russia, how I liked what I had seen, &c. I followed the Prince into a small, rather dark apartment; he there introduced me to His Imperial Majesty, and then retired a little distance behind."

"Here," as Canning says, "attention is awakened. Our whole souls are intent upon the first appearance of the hero." Lieut. Royer, by an ingenious dramatic artifice, drops the curtain. The chapter closes, and we have to turn the leaf before we stand in "the Imperial presence."

"The Emperor was standing in the middle of the room, dressed in the plain dark-blue uniform of a General-in-Chief, and wore a simple white enamelled cross at the button-hole on his chest. This, I believe, was the cross of the Order of St. George, an honour conferred only upon persons who have rendered important services to their country. I imagine that His Imperial Majesty has not yet assumed the decoration of the highest class of the Order, which is worn by such men as Paskiewitch, Woronzoff, &c., and which was described to me as different in size from that worn by the Emperor. I expected to see a fine

tall man, but was not prepared to find His Imperial Majesty so much superior to the generality of men in height and appearance. He certainly did not look more than fifty; nor were there any particular signs of care on his countenance, at least not more than one sees in every man of his age. His features were fine and regular, his head bald in the centre, and his eye expressive of mildness, quite in accordance with his words. I was aware that His Majesty spoke both English and French, and hoped that he would address me in my native tongue. As I bowed and stepped forward, he addressed me as 'Monsieur le Lieutenant,' and inquired after my health, whether I had got rid of my fever, and how and where I had caught it."

The Czar, whom a Frenchman described as combining the attributes of the Apollo and the Olympian Jove, at once told his prisoner that he was at liberty.—

"I was quite taken aback by this announcement, as although I had been told at Odessa that I should have my liberty, still I did not anticipate that it would be granted so soon and so freely. I was therefore unprepared to answer the question as to my intended route, and said that I really had not thought of it; upon which His Imperial Majesty burst into a fit of laughter, much amused at my surprise and embarrassment, and said, 'Allez donc, pensez-y (Go, and think about it), and let me know this evening, through the Minister of War, what road you would like to take.' He then bowed me out of the room, turning to the Prince, to whom he made some remark in Russian, and the latter followed me."

Lieut. Royer fell in with the Imperial procession, and went to chapel. "Three arches, supported by square columns, separated the Imperial family from their suites. The service was conducted by two priests, arrayed in gorgeous robes of green and gold, with mitres on their heads." In the midst of the ceremony the "eyes expressive of mildness" were directed towards the Englishman, who, probably, reminded His Majesty of Odessa, Sinope and Sebastopol.—

"Once during the service I was honoured with the observation of the Emperor; at another time the eyes of all the persons present were turned towards me: they were, no doubt, praying for a release from their enemies."

The Emperor Nicholas gave Lieut. Royer a sword. The Minister of War hinted "that he had no doubt I should speak well of them, and assure my countrymen that they were not such barbarians as the papers had represented them." And so, by "the Emperor's grace," the captive got home. But a spy was sent to fraternize with him on the way, and it was, perhaps, fortunate for Lieut. Royer that his sentiments were so favourable to the Government. The man kept close to him on his journey, and dogged his steps hourly at the frontier station.—

"The police-agent took up his abode in a room which opened just opposite to mine. He paid me repeated visits, excusing himself however for depriving me of his good company by saying he had some friends to supper, and asked me to join them. But I felt I could well dispense with his civilities, and wished him anywhere else. About eleven o'clock he came in again, and asked me, with many expressions of politeness and excuses for disturbing me, if I would allow a bed to be put up for him in the corner of my room, as there was no other place in the hotel! Knowing how my man was, I of course felt that it would be useless to object; so I put the best face I could on the matter, and he installed himself accordingly. When in bed, I saw the man come in (I suspect not over sober), lock the door, throw himself on his bed in his clothes, and attempt to read; but he soon fell asleep. I then got up, unlocked the door, took the paper out of his hand, and extinguished the light."

And lastly,—

"Just as the train was starting, I caught sight of my janitor of the previous night, who had just awoke in time to rush to the carriage-door, with his coat

hurriedly buttoned over him, and his braces hanging down; he came to see that I really *did* leave the territory of His Imperial Majesty the Autocrat of all the Russias."

Such are the impressions of a prisoner of war in Russia. He writes as if the Moscow Censor overlooked him. Not even a critical allusion qualifies his picture of any high and mighty personage. He is one of those Englishmen who dearly love a lord and almost adore an Emperor.

*Robespierre: a Tragedy.* By Henry Bliss, one of Her Majesty's Counsel. Kimpton.

Mr. Henry Bliss has been induced, it seems, to court the tragic Muse by the example of his friend Mr. N. T. Moile, whose *Tragedy of 'Philip the Second'* has "encouraged" him to put 'Robespierre' into rhyme. We were not aware of anything very encouraging in the success of 'Philip the Second'; and if we take the present tragedy as a fair product of its inspiration, we cannot help hoping that it has now exhausted its suggestive power.

Two pieces of strange prose accompany this stranger rhyme—one at each end of the volume—like policemen in attendance on a too hilarious reveller. In the first, the author addresses Mr. Moile as his "legal brother," and assures him of his "sincerest approval" of 'Philip the Second.' He is good enough to inform the world that Mr. Moile's 'Drama of Cicero' is "never to be finished"—(a circumstance against which we must arm ourselves with patience)—and, among other excuses for his own publication, observes that his labours have the "sole merit" of "attempting to contribute to the amusement of others." We were not aware that amusement was the object of Tragedy; but we are bound to say that Mr. Bliss's practice supports his principles. His play is exceedingly amusing. In the reply of his learned brother, Mr. Moile receives "with much complacency" the remarks of his friend on 'Philip the Second.' The two learned brothers, in fact, seem to be as well satisfied with each other, as the immortal Serjeants, their predecessors, in Pope's *Imitation of Horace*.—

The Temple late two brother Serjeants saw,  
Who deem'd each other oracles of law;  
With equal talents these congenial souls  
One lull'd the Exchequer and one stunn'd the Rolls.

\* \* \* \* \*

'Twas "Sir, your law," and "Sir, your eloquence,"  
'Your's Cowper's manner,' and "your's Talbot's sense."

Advancing to the Tragedy itself—which, in spite of the failure of Otway, and the received tradition of English criticism—is written in rhyme, we come full against 'The Prelude.' In this the reader is put through a severe preliminary training to fit him for his labours in the work itself. This was judicious. If he can contrive to understand 'The Prelude,' he has a chance of understanding the play; and if his patience will carry him through 'The Prelude,' he may hope, with time and effort, to get through the play also. It begins—

Daughter of France! though beautiful thy bowers,  
With arches, golden domes and pillared towers,

—we are here in Paris. So far all is clear enough. But presently we are uncertain whereabouts in the universe Mr. Bliss has got to. For,

The past reverberates from its dark profound,  
The future startles pale, and—

—and, in fact, we are in a terrible darkness; out of which, however, there presently looms a surprising object.—

Twin beams ascend. Their feet in crimson tread.  
A cloud with lightning pregnant wraps their head.  
Whence, flash on flash, a clanking cleaver swoops;  
The neck-stroke echoes, and heads roll, as hoops.  
Who has not heard it, found it in the wood?

Mr. Bliss has thus early, we see, brought us to the guillotine. How he "found it in the wood,"—as if it were a dryad or a beaker of



old wine—we do not pretend to guess. We hope we shall never find anything in the wood so very unlike the pleasant echoes of the name of Amaryllis, which Virgil taught us to expect there, long ago.

A man, however, may be expected to find anything, anywhere—

On fancy's wing when soars the soul sublime,  
And poured through nature's bursts the bound of time;  
—a subsequent couplet the meaning of which it is useless to guess at;—for, as the sage Imlac excellently observes in 'Rasselas'—"what reason did not dictate, reason cannot explain."

Robespierre now makes his entry on the scene,—

And muses to the moon on kings and crimes;  
And questions conscience; which replies sometimes.

By this time, we are let into the nature of the Tragedy, and prepared for a fuller revelation of the author's powers. In Act i. sc. 1, we have Robespierre—alone as at first appears; till "A Voice" makes itself heard in communion with him. To do Mr. Moile justice by the way, he, as appears from his letter to the dramatist (p. 271), cannot quite make out the meaning of that Voice—can we? He hesitates as to whether it is an impersonation of Robespierre's "remorse" or something else; and as to its propriety, he says, he cannot give an "opinion." We much fear that no member of the legal profession, be the fee what it might, could give an "opinion" of a satisfactory nature on the case of so mysterious a subject. Robespierre himself at first takes it for an echo, then for a watch-dog's howl, then for the result of a "swoon"; and at last, it urges him to the following,—

Moloch! Where's Death? Was that the Worm's abyss?  
Islam! The Beast! Unquenchable! What's this?

—This exclamation or explanation, it must be admitted, leaves the matter in some obscurity. Truly, it is very difficult to deal dramatically with the Supernatural! That Mr. Bliss should commence his play by attempting such a feat is one symptom of a want of judgment, of which nearly every page of his play affords remarkable proofs.

A good picture of that strange era and its strange men, in the form of a tragedy, would be a valuable study. But our dramatist does not appear to have taken the first step, by forming to himself any definite notion of the individuals. He raves and rages about "blood" from first to last—in such a way that the reader loses all sense of horror in the tedium. You yawn and laugh alternately. Not even the remembrance that all the events are events of yesterday ever beguiles you into a sense of the reality of what you are reading. Mr. Bliss's portrait of Robespierre is no more like the man than the Guy Faux of London street-boys is like his historic prototype. The style of Art is that of the itinerant wax-work shows, where plenty of red on the hands is thought enough to mark the murderer.

But although creative Art is a very rare gift, a certain moderate sense of what is fit and reasonable—of what is laughable or grave—coherent or incoherent—is not very uncommon in England among middle-aged gentlemen of education. Yet here we have "One of Her Majesty's Counsel" depicting a serious conversation on matters of life and death, between a historic French gentleman and a historic French lady, in this grave fashion:—

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her works, as Prof. Upham obviously does, it therefore does no small credit to his sound judgment, that he has abstained from exaggeration in stating her claims. He principally rests on his heroine's sincerity; and this all sincere persons must cordially recognize. It is true that some among his readers will feel a want of precision in his statement of her case, and will fancy that certain characteristics may be ascribed to the group of sectarians headed by Madame Guyon,—belonging to their birthplace as well as to the state in which French society found itself when they appeared. A certain dramatic excess ran through the quietism of the Port-Royalists, nay, even coloured the noble virtues of the Archbishop of Cambray, which is as clearly discernible there as in the periods of Bossuet of Meaux, the adverse churchman, who controlled Madame Guyon,—as in "the solidity" of that most respectable of married mistresses, Madame de Maintenon,—as in the devotional extremes of Madame de Longueville. Thus, too, with all their force and seriousness, there is a certain look of called-up sanctity in the ecclesiastical portraits of Philippe de Champagne which is of the same country as the called-up suavities of Greuse. The holy breathings of Madame Guyon,—her confessions,—her announcements of forgiveness to those who had injured her—her statements of her own utter unworthiness—her raptures in the mystic espousals to which she conceived herself called,—are, we doubt not, all faithful as reflecting her real feelings and aspirations. Nevertheless, we detect in them too much parade of *prie-dieu* and chalice,—too liberal a use of euphuisms piously akin to those which made the *esprit* of the Hôtel de Rambouillet a painfully superfine jargon,—not to consider her as a French missionary and martyr; as such, calling for a more discriminating touch than her American biographer seems able to bestow on her. Let us take by way of illustration the following incident, woven into Prof. Upham's narrative, from Madame Guyon's own Autobiography, without a word of caution or comment. The enthusiast, when still she might be described as a young mother, having a son to leave behind her, conceived herself summoned to quit Paris and to enter upon a career of missionary service in the remote provinces of France:—

"She left Paris, as nearly as can now be ascertained, early in July 1681. Considerable opposition to her designs manifested itself in some quarters, which rendered it possible, at least, that efforts might be secretly and perhaps violently made to prevent her departure. Her half-brother, La Mothe, who seems to have felt that he had some claims, or at least some expectations, on her property, had influence in high places, especially with the Archbishop of Paris, who had influence with the king. \* \* She thought it best, therefore, not to place herself in a situation where any attempt of this kind could be made upon her. Accordingly she departed privately from Paris, in a boat on the river Seine; a method of conveyance which would be likely to escape notice and to elude pursuit. She departed from Paris with her little daughter five years of age,—herself a widow,—attended only by a devout woman, whom she calls Sister Garnier, and two female domestics. \* \* She went forth with a definite object; but still she might say in some sense, that she went forth 'not knowing whither she went.' She was now in the thirty-fourth year of her age, and had been trained to the Christian warfare by a discipline, inward as well as outward, which eminently fitted her both for duty and trial. Home and friends she might be said to know no more; she became a representative of what she aptly calls the 'apostolic life,' with the world for her country, and all mankind for her brethren. From this time also we may number what she calls her 'years of banishment.' Wandering, persecutions, imprisonments, exile, were her portion. \* \* Her little daughter, afterwards the Countess of Vaux, and

by a second marriage the Duchess of Sully, then a little child, sat in the boat, and employed herself in cutting the leaves and twigs which she had gathered on the river banks, or as they had floated by on the water, into the shape of crosses. In this way she made a great number; and then, apparently unconscious of what she was doing, she went and fastened many of them to the garments of her mother. Her mother, at first, did not particularly notice what she was doing; but directing her attention to it soon afterwards, she found herself almost literally covered with crosses, which her little daughter had thus made. Having borne the cross in times past, and seeing but little prospect of a different result in future, she could not help looking on the act of her child as a sort of symbol and foreshadowing of what she would be called to endure. And this seems to have been the view of Sister Garnier, who remarked to Madame Guyon, 'The doings of this child appear to be mysterious.' And turning to the child, she said, 'My pretty child, give me some crosses too.'—'No,' she said, 'they are all for my dear mother.' But she gave her one to stop her importunity. But what was the surprise of Madame Guyon, when she saw her daughter a little afterwards weaving together a crown of leaves and river flowers. When she had completed it, she came and insisted on placing the crown upon her head; saying, 'After the cross you shall be crowned.' This perfected the symbol. First the trial, and then the reward; the night of affliction succeeded by the dawning and the noonday of joy. First the Cross, and then the Crown. This gave the transaction, though the doing of a little child, the character of a sign of Providence."

We have omitted in the above extract a phrase here and there, as unsuited to a secular journal; but, with or without them, the above "sign" could have been noted and recorded as such only among French people. The *Mémoires de Port-Royal* are filled with tales of like testimonials and encouragements. The humour that made an earnest and devout-minded woman treasure such a trifle gives also a mundane prettiness and luxuriance to her 'Canticles,' which even the modifying hand of Cowper, their English paraphraser, failed to render acceptable to those who are accustomed to the vigour and elevation of our own devotional poetry.

Our remarks on the tone in which a life of Madame Guyon might be written, and which Prof. Upham has overlooked, have led us accidentally into the middle of his narrative. But to trace it from beginning to end could in no case have been required in a publication like ours. Enough to recall to the reader that Mlle. de La Mothe was born at Montargis, in 1648,—that she was placed in a Benedictine convent at four years of age, where she "loved to be dressed in the habit of a little nun," and was "the subject of some religious impressions."—that in 1663 she removed to Paris, where for a time she forgot her cloister-thoughts in worldly dissipations,—that in 1664 she was married to M. Jacques Guyon, "a man of great wealth," whom she married without loving,—that her husband's family were harsh to her,—and that, driven upon herself, the old thoughts of her childhood came back, ripened and bore fruit, in the shape of an intense desire to preach and to lighten others with the visionary doctrines in which her own perturbed spirit had found rest. To this purpose, especially after she became a widow, the remnant of Madame Guyon's life was chiefly devoted. She conversed—she preached—she published—she defended herself under suspicion (for the beloved dogma espoused by her was in the eyes of the Church and the State only a covert heterodoxy)—she answered her judges with a patience and fluency which she believed were inspired—she endured imprisonment and forced suspension from her missionary labours with acquiescent sweetness. Her life, as Prof. Upham remarks in his Preface, might possibly be a necessary protest, the tone of which was determined by

the time and the society in which she was born; but both in example and precept its influences proved more perishable than permanent. Madame Guyon's devotional writings, however, are even now remembered and read, being consonant to the sympathies of those who prefer sentimental mysticism to meditation or practical instruction. The quality of her verse has been already indicated. She died in 1717, aged sixty-nine years.

## MINOR MINSTRELS.

*Viator: a Poem.* By J. Coventry, M.R.C.S. (Whittaker & Co.)—The author's Preface is as odd as his poem. He professes to excuse nothing he has written, yet, in the next line, declares his volume is a mere collection of notes, put down as the thoughts arose. Of course, 'Viator' was sent to the press solely at the request of numerous friendly subscribers. We are informed that the ill-timed death of the Printer has caused the displacement of many stanzas. This may perhaps account for transitions as abrupt as Pindar's and as unmeaning as Pybus's. It may also account for the Poem being written in a 'Childe Harold' stanza, interspersed with portions of comic songs, interwoven with metrical attempts in the manner of the New Version of the Psalms of David, verses after the manner of Burns, and notes scientific, philological and critical,—remarks on alchemy, Hudibras, Tangier, the rayfish, King Harold, Capt. Maryatt, the Caffre language, the chameleon, &c.

As a literary curiosity, the professional spirit visible in the poem is worth observing. The M.R.C.S. rejoices in dissection; every fresh touch of the knife furnishes a fresh line to the poet. When a shark is caught, we are told,—

Yet each hacked, mangled atom, life retains;  
Embowelled through, beheaded and betailed;  
As if the blood-drops of his venomed veins  
Were each a life; and when at length he failed,—  
with much more in the same vein of sense and grammar. Has every atom bowels and a tail?—has every atom venomed veins?—and can each vein be said to fail? In the same dissecting-school spirit are the following lines, in another metre, on the same subject.—

For your Shark delights in warm, live blood; no Hyena or Ghoul,  
Unhunger'd delving carrion food from churchyard—rank and cool.  
No! on living victims—fair and fresh—right lusciously he  
gloats;  
His choicest dish—the drowning wretch on drifting raft who  
floats.

No stratagem can baffle him; strength, courage, skill,  
avail;  
Such bristling tiers of sharp, jagged fangs, cause boldest  
heart to fail:  
One gulp! you're gone! your crunching limbs through all  
their fibres grate;  
That horrid maw's your sepulchre; no trace reveals your  
fate.

In one verse, the shark, in the true spirit of scientific poetry, is called—

One of the earliest medals in creation's mintage struck.  
The ocean flowers "lave their limbs,"—but the gem of this new system of natural history is the verse in which Mr. Coventry fancifully sketches the flying-fish and explains his mode of swimming.—

His urgent fins both steer him and impel  
His horizontal course; but he can sink,  
Float, duck, and dive without them just as well  
As with them; no reasoning man can think  
Such cause the effect produces:—no, a small  
Bladder, or sac's tack'd to his spine, which—gone,  
No longer can he either rise or fall.—  
But plumbs th' abyss, or floats the surface on,—  
His vertical gymnasia clearly past and done.

We appeal from the poet to the surgeon. Has not Mr. Coventry mistaken his vocation?

*Early Musings: a Collection of Sacred and other Poems.* By Amelia Brewster. (Hope & Co.)—We could not wish a more appropriate name than *Hope* for a poet's publisher, especially if the mystery of the Co. should hide



those important and too often sleeping partners of Hope—Faith and Charity. A reviewer needs all three when he turns over the leaves of the generality of the minor minstrels. 'Early Musings' is published by subscription,—a circumstance that says more for the charity of friends than for the goodness of the poems: not, however, that they are bad, though the subjects are vapid and objectless. 'The Child's Farewell,' 'The Old Oak Tree,' &c., are not promising names, nor indicate much width or depth of thought. The authoress seems to be the daughter of a clergyman, with the best intentions, who has certainly given us nothing in this volume worthy of the cost of printing.

*The History of the Great and Mighty Kingdom of China, and the Situation thereof. Compiled by the Padre Juan Gonzalez de Mendoza, and now reprinted from the early Translation of R. Parke. Edited by Sir G. T. Staunton, Bart.; with an Introduction by R. H. Major, Esq. Vol. II. Printed for the Hakluyt Society.*

THE second volume of this interesting work comprises the narratives of Friar Martin de Herrada, an Augustine friar, who went to China in 1577, and sojourned there between four and five months,—of Friar Pedro de Alfaro, of the Order of St. Francis, and his three grey brethren; whose "miraculous voyage" and travels in the interior are duly set forth;—and lastly, a narrative by the same friar, and by "Martin Ignacio, that went out of Spaine vnto China, and returned into Spaine againe by the Orientall India, after that he had compassed the world."

These narratives, although, on the whole, inferior in interest to those in the former volume, offer much that is suggestive, and afford many curious illustrations of China and the Chinese as they appeared nearly three hundred years ago. Friar de Herrada notes with much surprise—as his predecessors we have seen did [*Athen.* No. 1357]—the superior civilization of the Chinese, especially the elaborateness and cost of their entertainments; the "gallantly painted" tables, the sweetmeats "made of sugar and marchpane," which must have reminded the poemissionary of his native land,—of the "palm wine," which he considers a bad substitute for the rich wines of Spain,—and of the "two little stickes made of golde and siluer, and of a marvellous odoriferous woode, and of the length of little forkes as they doo vse in Italy." On his voyage to Chincheo he remarks, the number of villages "verie gallant and fresh, both on the one side of the river and on the other"; and how "all the hie waies are couered with the shadow of verie faire orchardes."

"In this hie way continually, there went and came manye pack horses, laden with marchandice and other thinges; but the most part of them were mules. The hie wayes are verie brode, that twentie men may ride together on a ranke, and one not hinder an other, and are all paved with great stones, and they say that the wayes throughout all the other prouinces be in the same order, and was done by a king of that countrie, who spent vpon the same a great part of his treasure. And it seemeth to be true, for that our Spaniards traucelling in that countrie, ouer high and mightie mountaines, yet did they finde the waies plaine, in such sort as hath been told you."

These were evidently the roads made by Kublai Khan, and of which Marco Polo gives so minute a description. On arriving at Chincheo, Herrada was struck with its size, although he remarks it "is of the common sorte in that kingdom, and may haue seuentie thousande householdes."

The Spaniards had "a louing and fauorable audience of the gouernor;" and, after a short stay, they set out for Aucheo, and in their way

they passed over "a mightie great ryuer, by a bridge all made of stone, the goodliest and greatest that euer they had seen, so they stayed and did measure it, that it might be put amongst the wonders of that country." They found it thirteen hundred feet long, and built of huge stones, "the least seuentene foote, and many of two and twentie foote long and eight broad." Their wonder was increased by the fact, that there appeared neither quarries nor rocks in the neighbourhood.

At their entrance into the city the people so crowded together—probably to see the strangers—and "were so great a number, that it seemed to bee doomes day, and that all the people in the worlde were there ioyed together in that streete." They were introduced to the viceroy, who received them courteously, and provided for them food and lodging. The size and magnificence of this city of Aucheo seem to have impressed them greatly. The suburbs they estimate at half a league in extent, and are "full of faire houses, and many shoppes full of merchandise."

"Before they came vnto the gates, they passed a mightie riuier three times, ouer bridges that were great and verie faire, and the riuier so deepe that great shippes came vp the same, but their mastes stooping downe to passe vnder the bridge. This citie is the richest and the best prouided that is in all the kingdom; it is the heade citie of all the prouince, verie rich and fertill, and manie townes belonging vnto it, and but eight leagues from the sea, and hath mightie riuers wherein great shippes come vp to it as aforesaide. \* \* This citie of Aucheo hath a verie faire and strong wall made of stone, which is fise fadam high and foure fadam brode, the which was meassured many times by our people, for that they had a gate out of their lodging that did open to the same. This wall is all couered ouer with tiles to defende the rayne water fro hurting of it, which could not to the contrarie but recieue damage, for that there is no lyme vsed in the whole wall. They haue not one castle in all this citie, neyther is there any vsed in all that kingdom; for all their force and strength is in their gates, the which be made verie strong, with a double wall within verie brode, betwixt the which are continually many souldiers, such as do keepe watch and ward both day and night."

After many conferences, and many delays, the accustomed suspiciousness of the Chinese appears to have been awakened. The poor friar and his companions were placed for some time in custody, although well treated, and at length the order was given for their return. Accordingly, with much sorrow did these worthy men return to Manilla, not having been allowed to exercise their calling, because the Chinese "haue a law in their countrie, by the which it is forbidden that none whatsoever can recieue any strange religion differing from theirs vpon paine of death, without consent of the king and his counsell."

Undeterred by the failure of these Augustine friars, Peter de Alfaro and his three brethren of the Order of St. Francis made another attempt the year after to enter this "great and mighty kingdom." These worthy men were as unsuccessful as their predecessors, although they also were treated with courtesy. Their first visit was to Canton, from whence they were also sent to Aucheo. On their voyage they also note the extraordinary fertility and populousness of the country, and many curious things.—

"Alongst the riuier side (whereas it was not inhabited) was full of corne fieldes, whereas they sawe them go to plough with many bufalos, much different vnto the vse of Spaine; for that one alonely buffe did drawe the plough, with one vpon his backe, who did gouerne and guide him with great ease whether hee would they should go, with a corde made fast to a ring at his nose, which serued in steede of a bridle. They sawe also flockes of geese, in the which were more thah twentie thousand; with whom they did

weede, and tooke away the grasse which did growe amongst the rice and other graine and seedes, driving them in the midst of their fieldes; and it seemed that they had the vse of reason, considering how they did separate and make a distinction betwixt the good seede and the bad, and the great care they had to feede and do no harme, neither to plucke vp the good plant, which was a thing that they wondred at aboue all the rest."

They are, however, on their arrival dismissed, and return after a trying voyage to Manilla, not without hope that if they can master "the Chinos" language they may again return and preach to "these blinde Gentiles."

The third and most curious narrative is that of Friar Martin Ignacio, who, beginning with the marvels of the Canary Islands, passes over to America, visits Vera Cruz and Mexico,—of which he gives a long description, and from thence, embarking at the port of Acapulco, proceeds to the Ladrones, and from thence to the Philippine Islands, and thus to China. But little is said of China, except as to the great multitude of shipping. The present writer, however, is the only one who refers to the Great Wall of China.—

"The other fourth part of this kingdom is compassed with a verie asper and high mountaine, which is fise hundred leagues vpon a right line: but nature had left certain places open towards the northwest, which might be fourscore leagues, little more or lesse, towards the Sea of Iapon, which is towards the Septentrion. The great riches of this countrie, and the great number of people that be therein, did supplie the same (as in the first part of this historie is more at large declared). And for that the king of this countrie seeing himselfe oppressed and troubled by the mightie Tartaro, and seemed that easily he might defende himselfe from him, in shutting vp of those gates which nature had left open betwixt the mountaines, he did shut it vp with the death of many thousande of people, for that hee, vsed therein great tyrannie, which afterwards was the occasion of his owne death. This mountaine, with the supply by man, is the famous wall of the kingdom of China, that is of fise hundred leagues long; yet you must vnderstande it in the manner aforesaide, the better to giue credite therunto, for alonely foure score leagues were made by mans handes with great industrie, and there is vpon it an infinite number of bulwarkes, which maketh it the more fayer and stronger, but yet not so strong as is the other four hundred and twentie leagues which were made by nature. Nigh vnto the same there is a great desert full of ditches and lakes of water, which is the occasion that this kingdom had beene conserved for more than two thousand yeares, as doth appere by their owne histories, which they holde to bee verie true."

Friar Ignacio, after a short sojourn in China, proceeded homeward along the Indian Seas, noticing the great pearl fishery, and the drugs, and "gallant woode," and spices of Camboia, and the white elephant of Siam, and all the marvels of that "land of Ind," on which the imaginations of our forefathers loved to dwell. Of the kingdom of "Coromandel and others his borderers," we are told that—

"there are in this kingdom many mynes of verie fine diamonds, and are had in great estimation, and very well known in Europe. There hath bene found in them a stone of so fine and of so great value, that but few yeares past, the king did sell the same vnto an other mightie king, his borderer, called Odialean, for a million of golde, besides other thinges of value that hee gaue him ouer and aboue."

To this Mr. Major appends the following note.—

"This is in all probability the great diamond mentioned by Tavernier, vol. ii, p. 249, as being in the possession of the Great Mogul. It was found in the washings near Caldore, to the east of Golconda, about the year 1550. Professor Tennant, in his lecture on 'Gems' before the Society of Arts, expresses his opinion that the Koh-i-noor formed a portion of this large diamond."

The worthy friar Ignacio proceeded by the Cape of Good Hope and the island of St. Helena homeward,—“so that after he had made his account of all that he had travelled from the time he departed from Sinele till he returned vnto Lyborne, he found that it was nine thousand and forty leagues by sea and by lande.”

#### OUR LIBRARY TABLE.

*School Experiences of a Fag at a Private and a Public School.* By George Melly. (Smith, Elder, & Co.)—Mr. George Melly offers this pleasantly-written book as evidence on a question which has largely engaged public attention of late,—not perceiving that his testimony is no testimony at all, owing to the manner in which it is dressed up and tendered. It is not only that the real “George” of the title-page becomes an imaginary “Edward” throughout the narrative,—that names and places are mystified, that descriptions are “written up” by one conscious of being apt in describing,—it is not merely that the worst of private schools is set against the best of public ones,—but within even these limits the “Fag’s” desire for advocating his favourite side is carried out in a manner which is hardly fair. In accumulating all the horrors belonging to “the usher system,” Edward, the narrator, has availed himself of the complaints of sundry fellow-scholars, in order to give the tale of bad management a very bad colour. Being sent from home to a comfortless, disorderly private school, where no one was to be flogged, and where nothing could be learnt, owing to the oppressions practised by boy upon boy, Edward ran away. Inured by his early apprenticeship “to rough it,” transferred to a capital public school, and finding himself presently at home among comrades who suited him, the same trials that before distressed him now seem to have passed for good jokes,—the life, erst so dreary, became bright with hope and enjoyment. Although, in his fifteenth chapter, he does give, on “hearsay authority,” the dark side of the picture,—enumerating a string of perils and abuses which leave little to the credit of public education,—whereas the showy part of the picture has been anxiously exhibited in the foreground, the drawbacks are huddled away into a corner. This is not “testimony”;—and thus “Edward’s” extreme satisfaction in the genteel and jolly life led by himself and mates at Harby School does not cut the knot of the difficulty of “fagging” for those whom fagging really oppresses. There may be poor, shy, physically feeble, unready, nervous boys,—neither vile, nor cowardly, nor churlish by nature,—to whom the hardening process of compulsory service—practical jokes regulated by authority—of destruction of property which they have no means of replacing,—proves not discipline so much as death to whatever is good and true within them. With such beings the vigorous, lively and rich can naturally have no sympathy; they are, accordingly, thrust to the wall and trampled under foot, with no one to mark their ruin or to consider their feebleness and unpopularity. The strong can defend themselves, caring little for kicks (to adopt the old saying) so long as they have the halfpence to fling about and to pick up. The weak must be cared for by law and opinion:—and how this is done, or is to be done, at a public school Edward’s experiences by no means show clearly. The cheerful and complacent manner in which they are thrown off, however, will recommend them as a book of light reading to all who are convinced that the author has the truth on his side ere they sit down to read.

*The Convent and the Manse.* (Nelson & Sons.)—This is an American story, and evidently written by a female hand. A great flux of words comes from American women just now; they consider themselves to have received the gift of teaching and preaching, and use it without stint or mercy. We receive it patiently, knowing that this flood of good advice will find its level, and share the fate of all the other good advice that has come upon mankind since the days of Adam. The faculty of *never-minding* is always developed in proportion to the moral nostrums advised. “The Con-

vent and the Manse” is intended, as the preface says, “to lift a voice of warning,” and to show the contrast between the pure and peaceable Protestants and the Catholics who are otherwise. Of course, all the virtues under heaven are represented as growing on the Protestant side of the hedge, whilst the Catholics are left bleak and barren on the other. This style of begging the question is little likely to promote brotherly love between the parties;—but as Catholics, in their turn, write pretty little picturesque stories in their own behalf, we can only suppose that there are individuals on both sides who enjoy the exercise. “The Convent and the Manse,” as a story, is by many degrees the most impertinent and uninteresting book of this class that has fallen in our way.

*Final Discourses at Argyle Chapel, Bath.* By the Rev. William Jay. (Hall & Co.)—These are the last words of a Christian patriarch, and characteristic of his qualities of head and heart. We doubt not they will be regarded as of value by his followers. The little snatches of poetry, the anecdotes scattered here and there, the firm yet gentle tone of admonition and rebuke, always kept in subordination to the language of affectionate invitation and encouragement, are life-like.

*Commentarius in Ecclesiasten, in Usum Juventutis Academicæ.* By D. Burger, Jun. (Weigel, Leipzig.)—This is a Latin version of the “Book of Ecclesiastes,” with Latin notes. In the “Prolegomena,” the author adduces numerous instances of a more modern phraseology than that of Solomon’s age, to support his opinion that the book was not written by the wise man. He also gives a list of passages which he thinks, when compared with others from the Proverbs, prove that the latter was a still more recent production. An *Epilogus* at the end contains his view of the argument of the work.

*The Confidences of Mdle. Mars, collected by Madame Roger de Beauvoir.*—[*Confidences*, &c.] (Jeffer.)—“Madam,” said Dr. Johnson, speaking of Mrs. Pritchard with more than his usual contempt for players, “she was a vulgar idiot, who talked of ‘her gown.’” It has been impossible for some who have studied the artist Nature to accept without question such a harsh character as this applied to the best *Lady Macbeth* whom our stage has ever seen. Such will be disposed to plead, that deficiency in social qualifications—absence of the power to explain, to confess, to reply—need not, of necessity, imply absence of intellect. But, after these charitable interpreters have been indulged to the full, and supposing their theory partly accepted, the fact remains certain, that some of the world’s greatest actresses have proved disappointing when they have been met with in society.—Mrs. Siddons, though assuredly not “idiotic,” was but a dull woman;—Mdle. Mars could not be “vulgar”; but we have heard her described as undistinguished in manner, sparing of words,—in the stage giving no promise of the *Célimène* of the salon. On these grounds, curiosity was naturally excited by the title of the book before us,—since, to the discredit of our experience, we did fancy that Madame de Beauvoir might have become the editor of some reminiscences, anecdotes, or diaries communicated by the great actress, whose long life had brought her into intercourse with the famous persons of so many dynasties. It would have been wiser, however, had we recollected that a title is no longer required to convey a clear idea of the contents of a book—also, that a distinguished name may be used mythically as well as historically. These three volumes contain simply a series of romantic and sentimental narratives, such as Madame Gay, Madame de Bawr, and Madame Ancelet have coined by the score; and little is hazarded in the assertion, that they are neither “private” nor “confidential” in their origin; but that they are the pure (and less pure) products of Madame de Beauvoir’s pen, ink, and leisure, to which the name of Mdle. Mars has been affixed, on the principle which has made diplomatic housewives christen some mean dish with a noble name, in order that ill-assured guests might eat and enjoy, and imagine that they were going home royally fed. These “Confidences” do not give us a trace of the woman who kept herself

young to the last, by resolving not to be old,—and who, coolly, when she was some sixty or thereabouts, declined “to compromise her future” by personating a heroine of thirty-five who had contrived expressly to “conciliate matters.” Here is not a glimpse of the artist who, after some thirty years of triumph in genteel comedy, was able to assert her own place of power in the romantic tragical *drame* of modern France, and this with such a formidable competitor in the lists against her as Madame Dorval. Here is not an indication of the dignity of the public favourite, who could rebuke the thoughtless insult of the funeral chaplet which was flung to her feet one evening shortly before she took leave of the stage, by taking up the cruel offering, calmly crowning herself with it, and saluting her audience! None of these things, or of the stages of life and phases of emotion which they indicated, are to be found in the insipid little fictions of Madame de Beauvoir; and we have only dwelt on them thus long to prevent others from being, like ourselves, deceived by a title, and to spare disappointment to the lovers of theatrical anecdotes or of light French literature.

The seventh volume of Mr. Bell’s nicely printed and prettily illustrated edition of Hume and Smollett’s *History of England* is before us. With this volume begins the work of Smollett, and it is very properly prefaced by a memoir of the writer. Altogether, this edition promises to be one of the most useful editions ever printed of a work which in spite of all its faults continues to be the *History of England*.—We have before us a new reprint of *Pern Leaves from Fanny’s Portfolio*,—a “cheap edition” of *The Head of the Family*,—a fresh impression of Milton’s *Paradise Lost* and *Paradise Regained*, in one volume, with explanatory notes by the Rev. J. Edmonston,—*The Flower of the Family*, a tale, we infer, of American origin,—and, from New York, a new translation of Plato’s *Phædo*, by Charles S. Stanford.—The following works have arrived at the honours of “second editions”:—Mr. H. Heinfetter’s *Literary Translation of the Last Eleven Epistles of Paul the Apostle*,—*The Hope of the Bereaved*, by the Rev. E. Davies,—*Practical Illustrations of the Principles of School Architecture*, by Henry Barnard,—and *The Statue Question*, by W. Peters.—We have also before us a third edition of Mr. H. Stephens’s pamphlet on *Cholera*.

#### LIST OF NEW BOOKS.

Book and its Story, 6th edit. post 8vo. 4s. 6d.  
Buckley’s Boys and Girls’s First Steps to Reading, 1s. 6d. each.  
Love Match, by Hon. Mrs. Maberly, new edit. 2 vols. 3s. 6d.  
Burns’s (Dr.) Sermons designed for Sick Rooms, 4th edit. 5s. 6d.  
Burns’s (Dr.) Sermons, 1s. 6d. each.  
Bravo (The), by J. F. Cooper, post 8vo. 1s. 6d. bds.  
Campbell’s Lives of British Admirals, abridged, cheap edit. 2s.  
Carpenter’s Principles of Comparative Physiology, 4th edit. 2s.  
Chambers’s Ed. Course, Geographical Text-book of Scotland, 12d.  
Circassian Chief, by W. H. G. Kingston, new edit. 6s. 3s. 6d.  
Curiosities of Biography, edited by R. Malcolm, illustrated, 3s. 6d.  
Desprez (Rev. P. S.), The Apocalypse Fulfilled, 6s. 3s. 6d. cl.  
Murphy’s Short and Easy Access to French Language, 3rd edit. 7s. 6d.  
Dinsford’s Family Medicine Directory, 4th edit. 12mo. 2s. 6d. cl.  
Eadie’s (Dr.) Biblical Encyclopedia, 5th edit. revised, 7s. 6d. cl.  
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Hume, Smollett, and Hugh’s History of England, Vol. 7, 4s. cl.  
Kuibitz’s (Rev. R.) Doctrine of Scriptural Predestination, 8vo. 3s. 6d.  
Lingard’s (Dr.) History of England, Vol. 5, 4s. 6d. cl.  
Love Match, by Hon. Mrs. Maberly, new edit. 2 vols. 3s. 6d. cl.  
Luther’s Life, Writings, &c., by M. Austin, trans. 2 vols. 8vo. 14s.  
M’Kidd’s (A.) Exposition of Romans vii. or 8vo. 3s. 6d. cl.  
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Reiner’s Library, Rookwood, by W. H. Ainsworth, 7s. 6d. cl.  
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#### [ADVERTISEMENT.]

THE AUTHORITY FOR THE NON-OBSERVANCE OF THE SEVENTH DAY.

It is recorded in Holy Scripture, Gen. ii. 3, That, on the Seventh Day of the creation, Almighty God “blessed and sanctified the Seventh Day;” this He did, without exemption



of any Nation, or limitation to any time; the command, therefore, is universal and imperative.

It is asserted, in direct contradiction of the expressed declaration in this record, That God did not deliver this command, on the *Seventh Day of the creation*; but that there is no command in Holy Scripture for the observance of the *Seventh Day*, but this previous to the time of the *Seventh Day* being treated of, as a commonly known and observed institution, see Exod. xvi. 23, &c.; this assertion cannot be regarded.

It is asserted, That though our Blessed Lord or His Apostles are not recorded in Holy Scripture to have commanded, yet the Apostles and first Christians, in addition to their observance of the *Seventh Day* as a Sabbath, are recorded to have observed a *Second Day* in each week as a day for assembling together for Religious purposes, namely, The *First Day* of the week; and further, it is asserted, That this day in Holy Scripture is called "*The Lord's Day*."

This is all that Holy Scripture does, or is asserted to record on this subject; and as our inquiry has relation to a command of God, we cannot give heed unto Tradition, without incurring our Blessed Lord's condemnation of the men of His time, seeing He condemned them, not for any fallacy in the argument they had constructed; but for the impety of constructing any argument on Tradition, to change any command of God. See St. Mark vii. 13.

It therefore appears, That there is no authority for the Non-observance of the *Seventh Day*, above, Dogmatic Teaching; or, The Edict of a Living Infalible Head.

May Almighty God grant us to consider, Whether if the Non-observance of the *Seventh Day* is not preached by St. Paul, and where is it preached by him? we are not cursed by the apostle, if we French, even though we claim to have powers equal to the *Angels of Heaven*. See Galatians i. 8.

HERMAN HEINFETTER.

17, Fenchurch-street,  
1st Sabbath, of 1852.

P.S. Sabbath, 1. 1854. Again, I inquire, "*Hath the Lord as great delight in burnt offerings and sacrifices, as in obeying the voice of the Lord?*"

#### OCEAN POSTAGE.

Mr. Elihu Burritt, in his commendable zeal for cheap international communication, and his natural preference for the proceedings of his own country, is somewhat hasty and incautious in his statement of facts, and thus in some sort endangers the cause which he labours to support. Thus in his letter, which appeared in the *Athenæum* of September 23rd, he erroneously represents the United States as having advanced beyond England in reducing the rates on transmarine letters.

To select the instance on which Mr. Burritt lays most stress—viz., the charge on prepaid letters from the United States to Australia, the facts are as follows:—Instead of the total postage being 2½d., as Mr. Burritt's letter would lead any one to suppose, the actual postage is either 6½d. or 8½d., according to the colony to which the letter is addressed,—the American charge of 2½d. not including the postage levied by the Colonial government, which is, in some colonies 4d., in others 6d. Whereas in the English rate of 6d., the Colonial postage is included.

Further, and this is a most important consideration, whether as respects the public convenience or the expense of conveyance, the English letters, instead of awaiting chance vessels, as is the case in America, are forwarded by regular monthly packets, bound to exactitude under heavy penalties.

It is evident, therefore, that the British arrangement for Australian correspondence, instead of being inferior to the American, is by far the more liberal of the two.

It may be well here to rectify a misconception that has prevailed as to the amount of the late reduction. The old rate is generally supposed to have been 1s. per letter,—that being the sum paid in this country; this, however, did not include the Colonial postage spoken of above, which raised the rate on letters in either direction to a total of 16d. or 18d., according to the Colony concerned, which rate is now reduced to a total charge of 6d.

#### OUR WEEKLY GOSSIP.

THE London season opens with a flush of strong emotions;—and the various caterers for the liberal pleasures of the public are preparing for their patrons. From all that we can hear, the prospects of the season are good. Among books of interest likely to appear ere long—besides the always-expected volumes from Mr. Macaulay, we hear of the completing volume of Mr. Grote's '*History of Greece*'—of the third volume of the '*Memorials and Correspondence of Charles James Fox*,' edited by Lord John Russell,—of Mr. Kaye's '*Governors-General of India*,'—of a new work,

'*Romany Rye*,' by Mr. George Borrow—of a work on '*Polynesian Mythology*,' by Sir George Grey, of which we hear curious accounts—of Mr. Leslie's '*Handbook for Young Painters*,'—of a large edition of the works of Arago, and the concluding volume of Col. Sabine's translation of Humboldt's '*Cosmos*'—of Mrs. Jameson's '*Common-place Book*'—'*Thirty Years of Foreign Policy*,' by the Author of '*B. Disraeli*,' a Biography, and Lord Carlisle's '*Diary in Turkish and Greek Waters*'—of new poems by the Earl of Ellesmere, Sydney Yendys and Mr. Alexander Smith—of two volumes of translations by Mr. George Borrow '*Songs of Europe*,' being metrical translations from all the European languages, and '*Kampe Viser: Songs about Giants and Heroes*,' from the Danish,—of new tales by Mr. Charles Lever, Miss G. E. Jewsbury, Mrs. Marsh, Mrs. Hubbard and Mrs. Moodie—of new biographies by Mr. Bayle St. John, Mr. John Forster, Mr. Dennistoun, the Rev. C. J. F. Clinton,—with a life of the poet Montgomery from the pen of Messrs. Holland and Everett,—and among more miscellaneous works, of Dr. Dorian's '*Habits and Men*'—Mr. J. A. St. John's '*Philosophy at the Foot of the Cross*'—Mr. Bell's '*Town Life of the Restoration*'—Mr. Hepworth Dixon's '*Domestic Life during the Civil War*'—Mr. Howitt's '*Note-Book of a Young Adventurer in the Wilds of Australia*,' and '*Traditions and Superstitions of the New Zealanders*,' by Mr. E. Shortland. Here, as may be seen, are many caterers for the general entertainment of an intellectual public.

The dramatic season, opening under the same pleasant auspices, also makes good promise. Established favourites are to contend against new aspirants for dramatic laurels. Mr. Jerrold's play '*The Heart of Gold*,' about which gossip has long been busied, and of which the highest hopes are entertained, is announced to be produced at the Princess's Theatre on Monday next. A five-act poetic drama, '*Videna*,' or, the Mother's Tragedy, by Mr. J. A. Heraud, is on the bills, at the Marylebone Theatre, where Mr. Wallack is worthily striving to convince the wealthy and cultivated residents of the west end that the highest class of drama may be domesticated in their own neighbourhood.—The Olympic opens on Monday under the management of Mr. Wigan, with his stock pieces.—And the Adelphi revives on the same evening an old favourite, '*The Station House*,'—Across the water, a new drama, entitled '*The Avalanche*,' is to be produced as the opening attraction at the Surrey—also on Monday night. A new play, of which report speaks highly, also poetic in its interest and construction, by an author new to the stage, is said to be in Mr. Phelps's hands, and likely to be given this season at Sadler's Wells.

Since our last impression a new entertainment, vocal and pictorial, has been opened in the Philharmonic Rooms, Newman Street, by Mr. Charles Cotton, under the attractive title of '*A Visit to Nelson's Flag Ship, the Victory*,'—and the Royal Panopticon of Science and Art has been re-opened for the season with new attractions and effects, pictorial and experimental.

Col. Sykes writes:—"I am quite aware that you cannot give space in your columns in reporting the proceedings of the British Association to any details of the discussions after the reading of papers, and I have not any complaint to make upon this head on personal grounds; but I could have wished when your reporter stated that the President of the Geographical Section called upon me to give my reasons for explaining that a Russian invasion of India was "*visionary*," that at least one of the reasons I gave had been recorded instead of the mere repetition of an assertion; and I beg the favour of you to give me space for my chief argument. I said, "*If Lord Keane, in the invasion of Afghanistan, backed by all the resources of India, in his comparatively short march from the Indus to Ghiznee, was compelled to put his troops upon half rations and leave his battering train behind, owing to the loss of cattle and other causes, and would have been compelled to retire (so it is said) had he not carried Ghiznee by a coup de main; then, by analogy, it is irrational to suppose a Rus-*"

sian army of 100,000 men could ever transport its ordnance and commissariat departments for a march of many months through sterile regions to India." I may add, that the constant discussion in papers and pamphlets of the possibility of a Russian invasion of India is mischievous, as it shakes the confidence of the native population in the stability of our rule in India.—I am, &c.

"W. H. SYKES."

Mr. Clay, of Preston, writes:—"Touching the Preston Strike, will you kindly permit me to correct your reporter (or myself) in reference to the mothers employed in our factories? I stated that about 1,000 of such mothers had children under five years (not months) old."

St. Edmund Hall, Oxford, has been begging for a Head,—and has found one only after a long search, and meeting with some refusals. It first went to the Senior Fellow of Queen's, Dr. Audland,—but the doctor of divinity would not have the crown. The second Fellow on the list, the Rev. W. Monkhouse, B.D., was tried, but neither would the bachelor of divinity accept it. Ultimately the office was accepted by the Rev. John Barrow, Junior Bursar and Librarian of Queen's, who will commence his new duties at the ensuing term. Mr. Barrow is known to be favourable to the progress of moderate reforms in the University.

Mr. Petermann informs us that further tidings have been received from Dr. Barth by Col. Herman, the British consul-general at Tripoli. In transmitting this news, which reached Tripoli on the 25th of August last, Col. Herman merely mentions that Dr. Barth's letter was dated four miles from Timbuktu, the 24th of March last, from which it appears that the Doctor had been detained in that quarter other three months. He had thus been staying at Timbuktu nearly seven months, the whole of which time he must have been under severe trials and dangers. His situation is thus described by himself:—"Like a helpless vessel on the ocean waves am I thrown about on a sea of uncertainty between the power and passion of contending parties, without having a moment's rest or quietness. Every day brings something new—now of a satisfactory kind, then again the reverse. Death, captivity, safe return home, are my visions by turns, and it is yet impossible to say which of the three will be my fate." Dr. Barth's high courage and his able manner of treating the natives, still justify the hope that he may be able to make his way back to regions whence his return to Europe might be easily accomplished. From Dr. Vogel there are no further news; but Col. Herman expected to receive communications from him about the middle of September. It must be gratifying to the public to know that Col. Herman and the other British Consuls in North Africa watch over the interests of the Expedition to Central Africa with feelings which are dictated not only by their official positions, but also by the highest personal sympathy with the undertaking.

Mr. Buchan, it seems, has "the courage of his opinions." A few days ago we pointed out certain blunders in his '*Prose and Poetical Reader*,'—blunders for which a schoolboy would have been reproved; but instead of taking our corrections in the courteous spirit in which they were offered, and inquiring of some one able to enlighten him, he comes forward to defend his ignorance. He still thinks the word *deface* comes from the Latin *facio*—and not from the English word *face*, as sense and etymology both suggest. Is Mr. Buchan aware that the compound from the Latin *facio* is *deficio*?—That the word *facies*, from which we get our English word *face*, comes from *facio*, is by no means an accepted derivation. As to *arduous* coming from *ardere*, as Mr. Buchan affects to believe, it is a charity to say nothing more about it. No scholar will accept such a derivation for a moment. Mr. Buchan refers us to Mr. Somebody of Edinburgh, and Mr. Somebody of London—whose works he says we have praised—in support of his vagaries. If he were to cite witnesses from Herne Bay and Stoke Poges, as well as from London and Edinburgh, we should still reject so absurd a suggestion. Because we may have spoken well of the works of Mr. A. of Edinburgh, and Mr. B. of London, Mr. Buchan

fancies we are bound to accept their mistakes, if they make any—we think quite otherwise. Such may be Mr. Buchan's inference:—we assure him it is not our practice.

If night balloon ascents are to be forbidden at Vauxhall, by the paternal care of our police, it is hard to comprehend why they should be allowed to pass as warrantable elsewhere. On Monday week, such a dangerous treat was provided at Cremorne Gardens. The balloon was decked with "allegorical figures symbolical of the Anglo-French alliance." There were two aeronauts. Owing "to the inferior quality" of the gas provided, the ascent was imperfect. The vast machine was caught in a tree, and entirely destroyed; and the two voyagers were delivered from their perilous position with difficulty. These things call for only one comment.

Mr. Robert Chambers writes:—"Twenty-two years ago I edited for Messrs. Blackie, of Glasgow, a 'Biographical Dictionary of Eminent Scotsmen,' in four volumes 8vo. They are now issuing a revised and altered edition of this work, with a supplementary volume, under the care of one of themselves or some anonymous assistant, yet with such a form of title-page and such a description in the Prospectus as are calculated to make the public suppose that I am the reviser and extender, and still the sole literary man responsible for the work. The inconvenience of this to me is already shown in such a fact as the exposure of a fabulous narrative interpolated in one of the memoirs of my composition. Its consequences to the public appear in the declarations of many persons that they subscribed for the book under a belief that it was wholly and solely under my care and authority. I hope I am only doing a justice to myself, in which all honourable literary men will sympathize, in asking you to aid in making the public aware that the book in question is one for which I have no responsibility. The publishers have endeavoured to justify their proceedings by asserting a right to 'proceed to the republication of this book in the manner they deemed best.' I am not disputing that they have the right to make alterations without the concurrence of the original author or editor, if taking some care that he does not appear responsible for them. But, surely these gentlemen can have no right, directly or indirectly, to make me appear as author or editor of recensions and additions which are the work of another person. If it be not so, I should say the woes of the unfortunate guild of authors have not yet been fully catalogued. Messrs. Blackie have further endeavoured to justify themselves on several frivolous pretexts, as that they long ago consulted me about this new edition, showing me a list of names for the supplementary volume, and that I saw their prospectus some time ago without making any remonstrance. I deny having been made aware that a revised reprint was determined on, in which case I should have claimed some right of interference. The prospectus I did not see till long after the publication of the book was commenced; and it so happened that, from hurry, I did not apprehend the full character of the liberty that was taken with my name. The wrong of which I complain appears best in the title-page of the work, of which I never saw a single volume till a few days ago. The fact of real consequence is not denied by themselves, that they never consulted me about the forms of either prospectus or title-page, but adjusted these to the advantage of their own interests, and the injury of mine, obtaining for the literary work of some person whose name they do not feel tempted to announce, the benefit of another name of a certain literary standing.

"I am, &c. R. CHAMBERS."

COLOSSEUM, Regent's Park.—Admission, 1s.—The original PANORAMA OF LONDON BY DAY is exhibited daily, from half-past Ten till Five. Museum of Sculpture, Conservatory, Swiss Cottage, &c. The extraordinary PANORAMA OF LONDON BY NIGHT, every Evening from Seven till Ten. Music from Two till Five, and during the Evening.

CYCLOPEDIA, Albany Street.—NOW OPEN, with a Colossal Moving Diorama of the City and Bay of NAPLES, MOUNT VESUVIUS, and POMPEII, exhibiting the great Eruption of 79, and present state of the Excavated City. Painted by Mr. J. McNevin, from Sketches taken by himself in 1852. Daily at Three and Eight o'clock, with appropriate Music and Description.—Admission, 1s.; Children and Schools, half-price.

#### PATRON—H.R.H. PRINCE ALBERT.

ROYAL POLYTECHNIC INSTITUTION, Mr. PEPPER, the Resident Director, begs leave to announce that the WHOLE of the RECEIPTS of the INSTITUTION on the EVENING of THURSDAY, the 13th inst., will be handed over to the ASSOCIATION for the BENEFIT of the WIDOWS and ORPHANS of the BRAVE MEN now FIGHTING the BATTLES of their COUNTRY. An INTRODUCTORY LECTURE to a COURSE on PHYSIOLOGY as connected with HEALTH, by Dr. CARPENTER, F.R.S. &c., on Monday evening the 9th inst., at Eight o'clock. An entirely new and splendid DUBOSCQ'S ILLUMINATED CASCADE APPARATUS, throwing three Jets instead of one, and DUBOSCQ'S NEW SUBMARINE ELECTRIC LAMP, MODEL of the HARBOUR and FORTIFICATIONS of SEBASTOPOL, made by Sergeant FAIRLAND and Corporal THOMAS of the Royal Sappers and Miners, Woolwich. DISSOLVING VIEWS of the SEAT of WAR in the BALTIC and BLACK SEA, with new PICTURES of the HOLY PLACES, and SEBASTOPOL and CROSTADT. Exhibition of the OXY-HYDROGEN MICROSCOPE. Lectures on NATURE, PRINTING, and on CHEMISTRY. On and after Monday, the 9th inst., the Institution will be open at Twelve o'clock.

#### FINE ARTS

##### NEW PUBLICATIONS.

*Twenty Views in Gloucestershire.* Photographed by Joseph Cundall. (Photographic Institution.)

THE Sun improves, and with patience and perseverance will make a very fair artist, with all the delicacy and finish of the Dutch school, but with more poetry of tone and more spirituality of expression. Nothing is too comprehensive or too minute for his skill; and we require a microscope to appreciate what this young master throws off in the fervour of a moment. The views now published were taken by Mr. Cundall and his promising pupil (the Sun) at the request of an eminent engineer, to be laid in evidence before a Committee of the House of Commons. They were produced by the collodion process, and were, as the letter-press quaintly words it, "all developed in a post-chaise." The Sun refused to receive any recompense for his very transitory trouble.—Mr. Cundall, less generous, executed them for a consideration. They may fairly be taken, so far as accuracy, pictorial effect, and height of finish are concerned, as the climax of the photographic art up to October 1854.

The views were all taken in winter, and by this means the artist has escaped the leaves, which Photography can scarcely represent:—either depicting them in blurred masses, a mere blot of black and white, or else in such speckled and fanciful minuteness, as to require strong magnifying power to detect the fidelity of form and colour obtained by a mere machine, aided by the great elementary power, subdued into a temporary obedience, like Aladdin's "Spirit of the Lamp."

In character of Art, Gerard Dow, perhaps, is the only Dutch artist whose sharp and morbidly-exact touch has anticipated the effect obtained by the collodion process. A few of the more laborious of the modern Pre-Raphaelite school of landscape painters have availed themselves of this new power, to aid them in their researches into rather more than mere observations of Nature. But no artist has yet obtained at once the breadth and finish of this extraordinary means of trapping a sunbeam, and arresting the swiftest cloud that drives across a summer sky. The air and earth can wear no aspect now so fugitive that it may not be conveyed to paper, and perpetuated for ever. Photography is the shorthand of Art, and renders the Past all but imperishable. The greatest events of history may now be handed down to posterity, not in mere record or prejudiced narration, but in fac-simile, by this magic of the Sun.

The defects of the art will soon diminish: its capabilities and powers are as certainly increasing daily. At the present time men are no longer burnt as sorcerers or imprisoned as heretics, (at least not in Protestant countries): the apotheosis of great men takes place in their lifetime,—men no longer pine in solitary garrets over despised inventions, which die with them. Photography, a science but of yesterday, is already practised by thousands both in the Old and New World. Hundreds of brains and fingers are at this moment studying to advance its powers. It will soon be a few years from the discovery of a science to the climax of its perfection. In a few years we shall see no black spots in photographic experiments; no white threads where there is really a variety of colour; no marbled blanks, no flaws like sores; no misty spaces, and no dulled obscurities,

which render the engravings too often curiosities and wonders in parts,—but, as a whole, failures and mistakes. Painting cannot fail to be improved by the advance of this discovery. With such incitements to shame his carelessness, and with such accuracy of form and variety of colour to rebuke haste and slovenliness, no painter can draw badly or colour conventionally. The wilful rejecting of three truths, in order to throw additional lustre on an imperfect fourth, will no longer be possible when a fac-simile of Nature's work is by his side to show him what can be seen in Nature,—what multitude, what wonder, what repetition, what earnestness, what sincerity! On the other hand, the Pre-Raphaelite will in despair give up mere imitation and aim at higher principles of Art.

These 'Twenty Views' consist of farm-houses, inns, schools, gravel-pits, ruined castles, springs, and mill-streams. In the view of Lyrdford Spring, the beauty lies in the entanglement of twig and spray, in lines fine as a needle could draw, and yet neither confused nor inharmonious;—thorny, trailing, spiry, bristling,—all distinguished, condensed to meet the observation, yet in no part shirked. 2. Lyrdford Mill. The broken thatch and crumbly loose tiling are given with an accuracy that delights and astonishes. 3. Andoversford, is a study of labyrinthine boughs against a clear cold sky, with light striking on some water just broken through a dark arch. 4. Andoversford Inn. Every freckle and spot of the stucco are reproduced to the eye, not to mention the landlord at the door, whose face requires a microscope to collect the likeness. 5. A Gloucestershire Farm-house. Here is an old stone wall, done in a way to madden a painter, the house itself being picturesque, with gabled ends and deep mullioned windows, and drip-stones. 6. Withington Mill. In this every shade and mottle of brick-work is given with force and truth; while a roof black with moss offers a perfect study for the young artist, who can see here exactly where Nature puts her light and shade, and where his should be; *how much, and where*,—two great things in Art. 7. Withington School. The specks, flaws, and tinting of stone are here given, with the picturesque force of Prout, the minute of Teniers, and something of the tone of Rembrandt. 8. Withington Gravel Pit. This is the most wonderful of the twenty for breadth and delicacy. Pebble banks, intersecting loose stone walls, pollard trees, and thatched cottages picturesque uncomfortable. There is quite a village in this one view, and we might spend a day in travelling over it, for there is no exhaustion in these views, and they cannot be dismissed with a smile of approval, like a smooth French lithograph. The degree in which they are appreciated will depend alone upon the spectator's knowledge of Nature, and the extent and accuracy of his corroborative observation.

The concluding views are Yanworth Mill, Yanworth Mill Stream, Stavell Mill, Coln St. Dennis, Arlington Mill, Bibury Bridge, the Coln at Bibury, Bibury House, Fairford Mill, a Mill Yard, Sudeley Castle, Postlip Mill. Of the effects that of water is the least successful,—light objects being, in general, less successfully caught than dark.

We shall soon have every village in England photographed just as show-places are at present; and we shall be enabled to look in absence upon fac-similes not merely of the dear faces, but the dear scenes of home.

*Photographic Views: 1. Hastings Castle. 2. Hastings Cliff. 3. Hastings Boatmen.* (Photographic Institution.)

THESE views are on a larger scale than Mr. Cundall's scenes in Gloucestershire, and display more perfectly both the perfections and imperfections of the collodion process, with its soft sepia tints, and its harmony of tone, form and colour. In the Castle Court the spottiness of the ivy impairs the beauty of the other parts. The sombreness is too monotonous and universal, and in some cases false in its effect. The gems of the series are the two groups of boatmen. The sailor smoking, the boy in his norwester and big boots, standing on a pile of ship timbers, the old man by the anchor pulling at a rope,—and, not least, the paling behind, with the pitch cracked and seamed, form an admirable



picture:—as true as Hogarth, but more tender and choice in execution. The net and the anchor, the dark shed and the shingle, are things to remember. Sharpness and softness, clear outline and breadth of tone, richness, depth, and variety of colour, were never before united in an engraving whose price was within the reach of a mechanic.

**FINE-ART GOSSIP.**—The German Art papers speak in terms of high eulogy of a silver tablet which the city of Berlin has just presented to the Prince and Princess of Prussia. The design is by Professor Fischer, and seems to be a singular compound of Medieval costume, genii with torches, and the usual allegorical paraphernalia.

Four bronze figures, by Kreling, of the size of life, in the costume of old German heralds, are to be erected in the castle court at Nuremberg.

The ancient Church costume is exciting now much interest among German antiquarians. Herr Bock has discovered at Anagni, near Frosinone, in Italy, some old priests' robes, which he believes to be of the age of Pope Innocent the Third.

The Berlin Exhibition this year contains 1,057 pictures.

The chief feature of the Dresden Exhibition is said to be a colossal group of Hagar and Ishmael, by Wittig, of Rome.

The Emperor Napoleon, while at Boulogne, inspected a basso-relievo by Mr. Carew,—the subject, the Union of the Two Fleets of England and France.

We find it stated in the *Hebrew Chronicle* that Herr M. Czarnikow has opened an atelier in Berlin for artificially manufacturing a kind of stone, which in every respect resembles granite, and which can be produced in the largest mass, as well as in the smallest particle, being capable, under the hand of the artist, to receive the shape of the most delicately-wrought statue. The stone, it is said, is cast, consisting of common sand, bound together by a peculiar kind of cement.

### MUSIC AND THE DRAMA

**ST. JAMES'S.**—This theatre opened on Monday, under the management of Mrs. Seymour, with a new and original drama, by Messrs. Tom Taylor and Charles Reade. The novelty is in five acts. These popular playwrights have now tried their strength on the great drama; and though to some extent, in the present instance, they are found wanting, practice cannot but conduce in future to better acquaintance with the requisitions of high dramatic art. The piece, though romantic enough in its theme, is historical in its colouring; and throughout there is a perpetual contest between the actual and natural and some ideal in the authors' minds which they have been unable to reach, and which the development of a five-act play necessarily implies. At even such a point the experience gained by the present composition will suggest a more imaginative treatment when next our authors adventure on the most important form of drama. The time and manners selected pertain to the profligate reign of *Charles the Second* (Mr. G. Vandenhoff) who is inspired with a passion for one of the Queen's maids of honour, *Miss Stewart* (Miss Glyn), who is attached to the *Duke of Richmond* (Mr. Mead). Evil tongues are busy with her fame, and Richmond becoming jealous indulges in drink and flirtation with *Nell Gwynne* (Mrs. Seymour). The Dutchman, with his impudent swagger, has penetrated the Thames as far as Chatham, and Richmond is needed on board the *Rupert*;—but to keep him nigh herself, the *belle Stewart* causes Charles to transfer his command to Lord Buckhurst. This nobleman neglects his duty, and lingers on shore, disguised as a waiter, in Spring Gardens, in order to watch Nell's doings with Richmond, when he ought to have been on board his ship. The Duke misinterprets his Lady's proceedings, as intended to degrade him, until Nell, prompted by a natural goodness of heart, undertakes to explain the matter to the half-maddened lover,—who, in his despair has joined in the Duke of Buckingham's conspiracy against the profligate monarch. Acting on the advice of the clever actress, however, he consents

to a sudden and secret marriage with Miss Stewart, who, having overheard Nell's conversation with the Duke, thoroughly understands the exigency of the position. But further danger threatens. From the hands of *Major Wildman*, (Mr. Stuart), when smitten by the plague, the loyal maid of honour had taken the documents of the conspiracy, without however reading the signatures, and had at once placed them in the hands of Charles. She is now in the situation of her husband's accuser—she has in fact brought him to the block. Nell Gwynne tries her best;—she burns one copy of the document, but its duplicate is found, and Miss Stewart is reduced to despair. So fervent and eloquent however are her pleadings with the Monarch, that his better nature is awakened, and a pardon extorted. The character of Nell Gwynne is a clever portrait; but it is coarsely drawn, and required for its toleration all the favour that the audience were disposed to extend towards Mrs. Seymour, who played it with great spirit. The part of *la belle Stewart* involved a more subtle treatment, and its points were cleverly contrived. But it is an ideal, and required poetic investments, the want of which left its representative without those opportunities of imaginative display which both the kind and length of the character alike demand. Miss Glyn entered into all its subtleties and pathos, and acted it with indisputable grace and dignity. She had to wait, however, until the last scene for a burst of passion and eloquence; and then, by its effective delivery, she brought down the curtain with applause. Some of the previous scenes had many points of danger—some excited disapprobation—and a general want of sustained interest and consecutive power was painfully felt. Here there was needed more concentration—there more elevation—here the incident was unpleasant, such as that of the Fifth Monarchy-man dying of the plague—and there the dialogue and situation were extremely meretricious. English prejudices were wantonly offended; and our dramatists were evidently more solicitous to prove that Nell Gwynne was "pure in the last recesses of the soul," than to condemn the immoral practices of her outward life. In a word, the treatment was apologetic, not straightforward; and the audience were naturally dissatisfied. The power of the concluding situation redeemed much; but we question if it has redeemed all. The production is undoubtedly clever;—but a higher merit than this well-abused word implies is requisite for the complete accomplishment of a five-act play, having a serious interest. As the action proceeds, the poetic element must be admitted; without it, collapse soon ensues, and the argument must expire of sheer exhaustion. The absence of that element was the cause of the weariness experienced during the third and fourth acts, and of the impatience which the audience found it impossible altogether to repress. Another cause was the introduction of too many accessories, and such historical portraits as *Samuel Pepys* (Mr. Toole) which interrupted the main business of the piece without adding to its interest. Mr. Vandenhoff was gay, but not courtly enough for Charles;—and Mr. Mead, though declamatory in Richmond, was deficient in true passion.—A farce succeeded the play. It is by Mr. Charles Selby, and entitled 'My Friend the Major.' Mr. Toole enacted the hero—a sheriff's officer, disguised as a friend—and showed an amount of humour in his odd ball-room adventures which was well appreciated by the house.

**DRURY LANE.**—Mr. Brooke's series of seven farewell engagements commenced on Monday, to a crowded house;—the characters are changed every night, and consist of *Virginius*, the *Hunchback*, *Richard the Third*, the *Stranger*, *Othello*, *Hamlet*, and *Macbeth*.

**MUSICAL AND DRAMATIC GOSSIP.**—From statements in the newspapers, we learn that the clear receipts from the Norwich and the Liverpool Musical Festivals are very small. In neither case are we surprised. The Norwich meeting, which had been thrust out of its course, from complaisance to Mr. Benedict and Mdlle. Lind,—was given, after only

two years' interval,—and without any novelty to pique the curiosity of those whom some unfamiliar work or some artist of commanding reputation might have tempted into attendance.—The Liverpool Festival was a mistake from first to last. It was finally decided upon in a hurry, and, of course, insufficiently advertised. From the same cause, its musical arrangements (as we pointed out) were unsatisfactory. Its main new feature, the organ, proved a huge blemish. It was fixed for a juncture, at which no one wanted an excitement; since the sympathies of the Liverpool pleasure-seekers were tuned to papers on the Law of Storms,—on Apes,—on the Statistics of Strikes, on Decimal Coinage,—or some other of the scientific *solos* which might be expected at a scientific gathering. Then, attendance at St. George's Hall twice a day must be burdensome and difficult to the more opulent inhabitants of Liverpool, whose fashion it is to live as far out of the town as possible,—yet, the Evening Concerts were too dear for the large class of resident concert-goers within the town. Lastly, the elaborate and exhausting formalities which had to be endured ere tickets could be paid for and seats secured, implied a sacrifice of time and trouble, which it was unadvisable to claim in a community of gentlemen actively engaged in business, while it almost precluded the possibility of any passing stranger partaking of the entertainment. When we think of the facilities with which guests are courted and accommodated on such occasions in every foreign town,—when we recall the example of prompt and practical courtesy which the gentlemen of Birmingham show at their Musical Festivals,—the disabbling difficulties of the Liverpool arrangements seem, by contrast, alike striking and curious. We cannot doubt that they did their part in making the inauguration of the most splendid music-room in England unpopular and financially a failure.

The *Théâtre Lyrique* of Paris has opened for the season.—Madame Cabel has re-appeared there with greater success than ever.—A new three-act opera by M. Geraert was to be performed in the course of the week.—A one-act trifle, 'Les Sabots de la Marquise,' with music by M. Boulanger, has been just produced at the *Opéra Comique*.—A new comment on the wondrous improvement made by Madame Stoltz during her years of absence from the *Grand Opéra* may be found in the fact, that she has already leave to absent herself thence, and is about, add the journals, to come to England. There is small chance, we apprehend, of her finding a part in any of the novelties in preparation for the winter, or the Exhibition season.—The *Italian Opera* opened on Tuesday, with 'Sémiramide,' in which Madame Bosio (!) assumed the heroine's part, and Madame Borghi-Marmo, the new *contralto*, and M. Gassier, the new *basso*, made their first appearances. Of these new artists we may speak on some future day.

A Correspondent says:—"The future existence of the Harmonic Union as a society is now very doubtful, and I have come to this conclusion from the fact, that two-thirds of the directors, together with the superintendents of all the different departments, namely, choral, band, and stewards, have resolved to discontinue their services in connexion with the Harmonic Union and will join the New Philharmonic Society,—taking with them the whole of their friends. One of the principal reasons which induced the gentlemen to resign their different offices was, the great improbability of Mr. Benedict again accepting the office of conductor."

We shall begin to have good hopes of music in America, should the Americans become deaf to puffery,—though the artists are not to be envied who arrive in the land of Barnum during the early days of so beneficial a change. The public of New York is said to have been little moved in favour of Madame Grisi and Signor Mario by the auction-trick and the newspaper-romance of the mysterious Lady who pursues the delightful *tenore*. The reception of the two artists has been so temperate, and the losses on their first operas were so heavy, that the *New York Musical Review* declares that "the dampening effect of a bad beginning" may be to drive the two artists back to Europe

forthwith. Such a consummation would not surprise us,—nor the reappearance of both, next year, in their wonted parts at Covent Garden. Meanwhile, the tide of transatlantic criticism flows pompously along. Of Madame Grisi, in 'Lucresia,' the *Review* aforesaid declares, that,—

"Her action has a trine glory; in grace she can only be compared to a picture of Raphael; in expression to a Michael Angelo; and in vigour to a Salvador Rosa. No sudden and unnatural movements; no raising the elbows higher than the head; no pacing from side to side; no useless motion; but every position a picture, and every picture redolent with truth and grace."

The italics in the above are ours.—The meaning of a picture redolent with truth and grace is not easy to guess. We have known pictures redolent with varnish.—Signor Mario is credited with a voice "even, firm, melodious and true."—Signor Susini, too, has his own word of quaint welcome. Says the critic, "he is a very pleasing *basso*, and we hope may be retained in our midst."—There seems no coming limit to the Exodus of European singers. The journal from which we derive the above extracts proceeds to state, that—

"Clara Novello has signed an engagement to come to this country, but owing to \* \* the squally prospects of musical enterprises in the United States, she will not come for the present; probably not before next spring.—Johanna Wagner, a celebrated soprano, and niece of Richard Wagner, the distinguished German composer, is also positively engaged to come to this country, but her visit will probably be deferred one, or even two years, as the condition of musical matters in this country may seem to require."

—Miss Catharine Hayes "that was" has left America for Australia.

Letters from Italy announce the very serious illness of Signor Rossini, in terms which preclude much hope of his restoration to health.

#### TWENTY-FOURTH MEETING OF THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

##### GENERAL COMMITTEE.

At the last meeting of the General Committee the following recommendations, involving grants of money out of the general fund of the Association, were offered and adopted:—

Key Observatory .....	£300
Physical Aspect of the Moon .....	25
Earthquake Movements .....	50
Tabular View of Strata .....	15
Strickland's Ornithological Synonyms .....	100
Periodic Phenomena .....	10
Vitality of Seeds .....	11
Typical Objects for Museums .....	10
Dredging near Belfast .....	10
Map of the World .....	15
Ethnological Queries .....	5

£751

The following communications were recommended to be printed among the Reports:—"On the Applications of Water Pressure Machinery," by W. G. Armstrong, Esq.; "Description of the Liverpool Anemometer," by F. Osler, Esq. F.R.S.

A change was recommended in the constitution of the Parliamentary Committee:—Two years non-attendance of a Member to be equivalent to a resignation,—the Member capable of re-election.

The thanks of the Association were voted to the Parliamentary Committee on account of their valuable services.—The Establishment of the Meteorological Department of the Board of Trade, the aid to this object given by Lord Wrottesley and Mr. J. Heywood, and the regretted retirement from Parliament of Sir R. H. Inglis, Bart., were especially mentioned.

The following Applications for Reports, Researches and Inquiries were made:—On Chemical Differences of Iron, by Dr. D. L. Price;—Chemical Action of Solar Rays, by Robert Hunt;—Flax Fibre, by Dr. Hodges;—Solar Radiation, by Dr. Gladstone;—Chemical Manufactures in Glasgow, by Dr. T. Anderson;—Chemical Affinity, by Dr. Williamson;—Electro-Chemistry, by Dr. Miller;—Mollusca of California, by P. P. Carpenter;—Strength of Iron Plates, by William Fairbairn;—Friction of Discs in Water, by James Thomson, and a Committee;—Channel of the Mersey, by Earl of Harrowby, and a Committee;—Naval Architecture, by J. Scott Russell;—Balloon Ascents, Committee;—Statistics of Life Boats, Col. Chesney, and Committee;—Boiler Explosions, Committee.

Applications to Government for the following

objects were agreed to:—For the use, rent free, of Two Acres of Land adjacent to the Observatory at Kew.—For the laying on of Gas to Kew Observatory.—For an early publication of the Heights of Ground determined by the Trigonometrical Survey; the levels of the Sea which are the base of the observations; and the reasons which have guided the selection of the places where the Sea levels were taken.—For accelerating the Expedition to North Australia.—For illustration of Naval Architecture in the intended Museum at Liverpool.—For considering the subject of Navigation of Iron Ships.—For rendering the Patent System more available to the Benefit of Inventors.

#### FRIDAY.

##### SECTION A.—MATHEMATICAL AND PHYSICAL SCIENCE.

The first paper was read by the Rev. Prof. POWELL, being a third Report (supplementary to two former, read in 1832 and 1840), 'On the Present State of our Knowledge of Radiant Heat.'—The author presented this as the first portion only of the Report he had engaged to furnish, having been long delayed in preparing it, and unwilling to protract further the presentation of it. It consisted, in the first instance, of some preliminary remarks on the confusion introduced into the subject from the neglect of those well-marked distinctions which the author had long ago dwelt upon between the different species of rays, all included under the common name of radiant heat, but which had been shown to be materially different in their nature and properties. He then adverted to the theory by which all those different kinds of effects are ascribed to the absorption of rays emanating from hot and luminous bodies and which are all produced in the same manner, viz., by undulations, but of different lengths,—those of the greatest lengths having a heating but not an illuminating power;—those of less lengths a luminiferous property also;—those of still less lengths, little heating but higher chemical power. The arguments of M. Melloni were specially dwelt upon; as also the striking confirmation derived from certain calculations founded on the wave-theory, which assigned a limit to all refraction, according closely with that found experimentally for heat in rock-salt. The Report next gave a full analysis of the extensive and valuable researches recently carried on by M. Knoblauch, as well as some others by that gentleman and Melloni, on the transmission of heat through crystals. In conclusion, the author reviewed the recent remarks of Mr. Joule and Prof. Thomson, so far as they bore on the subject of radiant heat.

As he concluded, Prof. POWELL asked Prof. W. Thomson whether he had correctly reported his published researches and views in this branch of Physics?—Prof. THOMSON said, the Report was perfectly correct as to his portion of the investigations; and added, that all the examination of this subject which he had made since, and all the researches of Mr. Joule and Mr. Rankine, had tended still further to confirm and establish the Dynamical theory of heat.—Prof. STEVELLY begged to ask Prof. Powell and Prof. Thomson how, in their opinion, the expansion of bodies by increased extent of the vibrations or on the Dynamical theory increased heat was to be reconciled with the well-known fact, that four substances,—water, antimony, cast-iron and bismuth,—were known to expand in the process of cooling.—Prof. POWELL replied, that these cases alluded to by Prof. Stevelly constituted a difficulty in any known theory of heat, and were therefore not more adverse to the Dynamical theory than to any other.—Prof. THOMSON said, that besides those cases stated by Prof. Stevelly being no greater difficulty in the Dynamical theory than in any other, that theory seemed to hold out a hope of explaining these anomalies. In his opinion, water while cooling, for instance, began at its maximum density to approach that molecular arrangement which it fully and fixedly attained in the act of solidifying.

—Prof. STEVELLY said, he was not satisfied with the answer, that this was a difficulty in all other theories as well as in this, for a true theory must be at least reconcilable with all well-established

facts; and as he was nearly satisfied that this was a true theory, and as the facts he had stated were indisputable, he was sure the Section would feel grateful to Prof. Thomson if he would explain. Supposing each molecule to have poles, he conceived those facts might meet a physical explanation by the Dynamical theory.—Prof. THOMSON,—in answer to Prof. Stevelly's question, if the Dynamical theory of heat, on which the new theory of solar heat is founded, could explain the strange, almost anomalous, expansion which water exhibits before freezing?—remarked that, since in the act of freezing water expands, it is certain that the polar condition which the particles assume fixedly when solid, is such that they keep one another further asunder than when turning about into all possible relative positions as they probably do in their thermal motions when the mass is liquid and warm. It appears, then, very highly probable that when the water is cooled towards the freezing point, the energy of these thermal motions is diminished, so that the excursions of the polar axes of the particles become confined to narrower and narrower limits, and the axes of contiguous particles begin to affect, or tend towards, those relative positions into which they settle in freezing. This tendency would make the particles begin to keep one another further asunder, or make the whole mass expand, even before it freezes, when its temperature is lowered below a certain limit, and would explain the fact that water does expand as it is cooled below 39° Fahr. After the mass is frozen, the thermal motions of or among its particles can scarcely be motions involving any excursions of their polar axes; and whatever they are, a diminution of them will again begin to produce the natural and ordinary effect of a diminution of what Sir Humphry Davy has well called "repulsive motion";—that is, will allow the mass to contract. The Dynamical theory of heat, then, while it obviously shows the true reason of the natural and ordinary phenomenon of the contraction of a mass, whether fluid or solid, may consistently explain the contraction of liquid water as it is cooled down to 39°, its gradual expansion as it is cooled further, its sudden expansion in freezing, and the contraction which the solid ice experiences when the lowering of temperature is continued.

Prof. STOKES addressed the Section with reference to a passage in the Report. He remarked that there was one phenomenon relating to light which was strictly analogous to, if not identical with, (he himself believed identical with,) the gradual emission of radiant heat by a body which had been warmed by exposure to radiant heat: he alluded to phosphorescence. This phenomenon was very intimately allied to another, exhibited by a solution of sulphate of quinine, by glass coloured by oxide of uranium, &c., which has been termed fluorescence. In the latter phenomenon certainly the law appeared to be general, that the light emitted was of lower refrangibility than the rays affecting the medium; and the same appeared to be at least usually true in the case of phosphorescence. Dr. Draper had indeed stated that Canton's phosphorus was rendered luminous by the rays from incandescent lime after traversing a strong solution of bichromate of potash. Prof. Stokes stated that he had repeated this experiment, but had not obtained the same result, the rays in his own experiments having proved inefficient after traversing the solution. It seemed worthy of investigation to examine whether the heat emitted by a body which had been heated by rays of some particular refrangibility consisted in all cases exclusively of rays of lower refrangibility. Much progress, he conceived, would be made in our knowledge of the subject of radiant heat, if the absorbing power of several common substances, such as water, alum, &c., frequently employed in researches on heat, were determined for each degree of refrangibility of radiant dark heat in particular. This determination would require, first, the formation of a pure heat spectrum; second, the rendering in some manner its existence sensible. The first would require the observer to be possessed of a prism and a lens of transparent rock-salt. Although recent investigations had shown, as had



been anticipated, that this substance was not perfectly transparent with respect to dark radiant heat, yet of all solid or liquid substances hitherto examined it was by far the most nearly transparent. The most hopeful direction in which to look for ready means of rendering sensible the presence of rays of low refrangibility seemed to be their chemical effects. If some of those who were skilled in photography would turn their attention in this direction, we might soon be in possession of very sensitive preparations, by means of which the absorbing power of various media with respect to these rays might be determined by merely interposing, anywhere in the path of the rays, a plate of the substance to be examined. As Prof. Thomson's theory of the cause of the solar light and heat had been mentioned in the Report, Prof. Stokes took this opportunity of expressing the great satisfaction which he felt in it.

An apology was read from Sir W. SNOW HARRIS, for the absence of his Provisional Meteorological Report.

'On the Diamagnetic Force,' by Prof. TYNDALL.—With regard to the character of the diamagnetic force great diversity of opinion prevails. In Germany, we have Weber affirming that diamagnetic bodies possess a polarity opposed to that of iron. Weber's countryman, Von Feilicht, combats this opinion in a series of Memoirs recently published in Poggendorff's *Annalen*. He affirms that diamagnetic bodies possess a polarity the same as that of iron; and endeavours to bring the phenomena into harmony with this view. In this country, on the contrary, we have Prof. Faraday, and it was believed, Prof. Thomson, neither of whom are prepared to admit the existence of any polarity whatever on the part of diamagnetic bodies. These divergences were a sufficient proof of the difficulty of the subject, and the necessity of caution in dealing with it; the author, therefore, thought it well to commence with the fundamental phenomena, and ascending from them to the more complicated, to endeavour to obtain, by strict adherence to experiment, a clear insight as to the real nature of that force by which certain bodies are repelled by the poles of a magnet. From an extensive series of experiments made with different bodies, and under the most diverse circumstances, the author selected a few which clearly exhibited the law according to which the repulsive force augments when the strength of the repelling magnet is increased. Were the repulsion of a diamagnetic body dependent on any constant property of the mass, then its repulsion must be simply proportional to the strength of the magnet; but it is proved by the concurrent testimony of experiments carried on in Germany, France, and England, that, for a wide range of magnetic power, the repulsive force increases as the square of the strength of the influencing magnet. This leads inevitably to the conclusion, that the repulsion of a diamagnetic body depends, not alone on the magnet operating upon it, but upon the joint action of the magnet and diamagnet. A piece of bismuth, for example, in presence of the magnet is thrown by the latter into a state of excitement, which varies as the magnetic strength varies, and in virtue of which the substance is repelled. The next question to be decided is, whether the state of excitement evoked by one pole, in a diamagnetic body, enables a pole of an opposite quality to repel it. To decide this, two cores of soft iron were so bent, that the two semi-cylindrical ends of the cores could be placed close together, so as to form a single cylinder of the same diameter as that of the straight portions of the cores. The cores being placed in suitable helices could be so excited that the contiguous poles were of the same or of opposite names. A bar of bismuth was freely suspended, so that both poles could act upon it simultaneously. When the cores were excited, so that the poles were alike, the bismuth was repelled; when the poles were of different names, the bismuth remained motionless; all action upon it was annulled. This experiment confirms those of Reich, and proves that the condition, whatever it may be, which is evoked by one magnetic pole is neutralized by the other,—that each particular pole evokes a condition peculiar to itself;—and

here we obtain the first glimpse of the dual nature of the force under consideration. The next portion of the inquiry treated of the deportment of diamagnetic bodies when acted upon, firstly, by the magnet alone; secondly, by the electric current alone; and, thirdly, by the current and the magnet combined. When we speak of the deportment of bismuth in any one of the cases mentioned, no exact meaning can be attached to the phrase unless it be first strictly defined in what direction, as to the planes of crystallization, the mass has been cut. A bar of bismuth, in which the planes of principal cleavage are parallel to the length of the bar, and acted upon by the voltaic current alone, will set itself parallel to the current's direction. A bar, on the contrary, in which the planes of cleavage are transverse, will set itself at right angles to the current's direction. The former bar Prof. Tyndall calls a normal diamagnetic bar; the latter an abnormal one. The most perfect antithesis is observed in all cases between the deportment of the normal diamagnetic bar and a bar of soft iron; the forces which cause a deflexion of the former from right to left produce a deflexion of the latter from left to right. If the former take up a position of equilibrium from south-west to north-east, the position taken by the latter will be from south-east to north-west; and throughout the whole experiments the same opposition of action is exhibited. By mechanical means, an abnormal magnetic bar was obtained—a bar which set its length at right angles to the line joining the poles. The abnormal diamagnetic bar shows throughout a deportment precisely antithetical to that of the normal magnetic one; but when we compare the normal magnetic with the abnormal diamagnetic, or the normal diamagnetic with the abnormal magnetic, the deportment is in all cases perfectly alike. It is evident, therefore, that unless the influence of structure be attended to, the greatest errors and the most inaccurate conclusions may be founded on the deportment both of magnetic and diamagnetic bodies in the magnetic field; but the thing which chiefly concerns us is the strong presumption which the experiments justify, that whatever be the nature of the influences evoked in magnetic bodies by the action of currents, or magnets, or of both combined, to an influence, of the same nature but antithetical in its manner of distribution, the deportment of diamagnetic bodies is to be referred. The next section of the inquiry imparted clearer knowledge as to the nature of diamagnetic action. Two helices were so placed that the ends of the soft iron cores which fitted into them were about 6 inches apart from centre to centre; the helices were at opposite sides of the plane which touched the ends of the cores. A helix of copper wire was introduced, and within it a bismuth bar  $6\frac{1}{2}$  inches long and four-tenths of an inch in diameter was freely suspended, so that the ends of the bar were opposite to those of the soft iron cores. A current being sent through the helix, if the bismuth bar within it were excited by the current it was probable that the nature of the excitement would manifest itself in the action of the magnets upon the diamagnetic body. By working delicately the most perfect mastery was obtained over the suspended bismuth; when the current through the helix flowed in a certain direction the ends of the diamagnetic bar were repelled by the electro-magnets; when the current flowed through, the helix was reversed, and the same ends were attracted by the magnets. The same effect was obtained when, instead of reversing the helix current, the polarity of the two magnets was reversed. On comparing the deflexions with those of soft iron, it was found that they were perfectly antithetical. The excitement which caused the ends of the iron bar to be attracted caused the ends of the bismuth bar to be repelled, while the excitement which caused the ends of the iron bar to be repelled caused those of the bismuth bar to be attracted. All these experiments point irresistibly to the conclusion that, whatever the ideal magnetic distribution in iron may be, a precisely opposite distribution occurs in bismuth,—or, in other words, that the diamagnetic force is a polar force, but that the polarity is the reverse of magnetic polarity.

If, however, this be true, the bismuth bar, when the current circulates round it, must have its two ends in different states; but if in different states, then if we make the two poles acting upon the ends of the bar alike, we ought to have attraction at one end and repulsion at the other,—the result of their opposing actions being that the bar must remain undeflected. The decisive experiment has been made, and the result is in perfect accordance with the conclusion just expressed; when both magnetic poles are of the same name they completely neutralize each other. Following up this inductive reasoning, it is easy to see that, if what has been stated be correct, when we bring two magnets with poles of the same name to bear upon a bismuth bar, the direction of the force emanating from the two poles being the same, then the repulsion of one end and the attraction of the other, instead of, as in the former disposition, neutralizing each other, ought to constitute a mechanical couple tending to deflect the bar; and if two other poles of the same name, but of opposite names to the former two, be caused to act upon the bar the force of deflexion ought to be increased. In this form the experiment was made before the Section. Four magnets were made use of; the two poles to the left were of the same name, and the two to the right were of the opposite quality. The result completely coincided with the author's anticipations, and the bar was promptly deflected. These experiments, without any exception, are all corroborative of the view, that diamagnetic bodies possess a polarity opposed to that of magnetic bodies,—but they do not prove that the physical theory of Weber is correct. Indeed, it is scarcely possible that this theory can stand in opposition to the experimental evidence which can be brought to bear against it. One consequence of this truly beautiful theory is, that when the particles of a diamagnetic body are caused to approach each other, the effect of their approximation will be to enfeeble the magnetic action along the line of approach. This view is opposed by the most direct experiments, which prove that the approximation of diamagnetic particles has an effect precisely opposite to that deduced from the theory.

Prof. W. THOMSON remarked, that as early as the year 1847 he had published in the *Cambridge and Dublin Mathematical Journal* for May of that year, a theory of the phenomena presented by diamagnetic bodies in the neighbourhood of a magnet, in which it was assumed as the only possible explanation of the repulsions observed by Faraday, that magnetic force induces upon a fragment of bismuth or of any other diamagnetic substance a polarity reverse to that which a piece of soft iron experiences in the same circumstances. In that paper the same set of mathematical formulae are applied to either ferromagnetic (paramagnetic as they are now called) or diamagnetic bodies; the sole difference between the two cases being that a certain co-efficient, which measures the inductive capacity of the substance, has positive values for all ferromagnetics, and negative values for all diamagnetics. Since the time when that Paper had been published, he never had either expressed or felt the slightest doubt as to the certainty of the explanation of the elementary phenomena of diamagnetics which it afforded. Some views, founded on the impossibility of a perpetual motion, such as it appears, would result from the actual substance of a diamagnetic solid receiving by induction a state of magnetization the reverse of iron in the same circumstances, which had been brought forward by Prof. Thomson at the Belfast Meeting of the British Association, had been referred to as opposed to the theory of the polarity of bismuth. Prof. Thomson explained that those views led to the conclusion, not that bismuth experienced no magnetic polarity, but that the actual magnetization of its substance could not be the reverse of that of soft iron, and that the surrounding medium (whether it be air or what we habitually but falsely call vacuum) must experience magnetization similar to that of iron in the same position, and greater in degree than that of the bismuth. According to this conclusion, the definition of an ordinary diamagnetic is, a substance less magnetizable than air. Prof.

Thomson further remarked, that he had not perfect confidence in the truth of this conclusion, as one of the assumptions on which the reasoning was founded admitted of doubt; but he had no doubt whatever of the resultant polarity of bismuth, however occasioned, being the reverse of that of iron. He concluded by expressing complete agreement with Prof. Tyndall on this point, and admiration of the remarkable combination of powerful and delicate apparatus, and the beautiful and well-planned experiments by which Prof. Tyndall has so successfully demonstrated the antithesis between iron and bismuth to the Meeting.

'On a Method of Manufacturing Cylindrical Lenses,' by Prof. STURM, of Vienna.—The stages through which the science of Optics has passed since Euler's discovery, nearly 100 years ago, of the principles of Achromatism, have not proved the infallibility of the system of the spherical lenses for optical purposes. I now, however, call your attention to cylindrical lenses ground by machinery, invented by myself, which is done with such perfection that I humbly hope they may be the means of opening a new field to science. In the first place, that the cylindrical principle, in general, is superior to the spherical will appear from the circumstance, that a perfectly cylindrical lens is free from the defects of spherical aberration, and that the opposite rectangular planes combine in forming ellipses in their intersections, and consequently show a greater precision, distinctness and luminousness, and less contraction of dimensions; they, therefore, admit of enlarged visual angles. The cylindrical system, moreover, renders it practicable to form curves of all kinds, for instance, parabolas, hyperboles, ellipses, &c., which is impracticable in the spherical system. In the second place, the afore-mentioned machine is so constructed that every lens, even for spectacles, appears centred, since the cross lines of the two planes pass through the middle, whilst the centralization of spherical object-lenses is, as known, very difficult and imperfect. This defect arises both in the best spherical and cylindrical lenses from their being hitherto ground by hand; the imperfection becoming more evident in the latter than the grossest defects in the former; and this doubtless is the reason why science has not bestowed more attention upon cylindrical lenses. No one would expect the formation of a perfectly circular cone without the instrumentality of a turning lathe; and in like manner, what the turning lathe is to this or other articles to be finely rounded, the machine I wish to introduce is for optical lenses; hence, too, the advantage of the perfectness of its productions, and also the rapidity of the manufacturing process. In the third place, in order to prove the better preservation of the eyes by the use of cylindrical lenses than by the spherical, it is only necessary to observe that two cylindrical planes, intersecting each other at right angles, have the effect of neutralizing the defect of spherical aberration; whilst two parallel spherical planes produce the effect of doubling the imperfection; moreover, we need only to advert to the structure of the eye in man and other animals, which is not spherical, nor achromatic, and is nevertheless free from the defect of aberration:—it is, rather, the elliptic shape, which, in creation appears to predominate,—as, for instance, in the planetary orbits, in magnetic currents, &c. And, since the effect of a cylindrical lens approaches that of an ellipse, and since, moreover, an optically diseased eye shows a still greater departure from the spherical form, it is equally apparent that a perfect cylindrical lens is the best adapted, as the passage of the rays not only takes place in and about the centre, but on every point of the surface, thus effecting an equable and perfectly regular distribution of light on all points.

The Abbé MOIXO begged to state that cylindrical lenses were not the invention of M. Sturm. M. Chamblaud, a Frenchman, had described them long since.—M. STURM explained that he did not claim the invention of such lenses, but only of a means of accurately centering the halves of such lenses, and manufacturing them with strict correctness, which had never been before accomplished, and thus making them practically available for

telescopes, and even for spectacle-glasses. He then exhibited drawings of the machine by which they were ground.

'Notes on the Mountain Gassendi, and further Trials of Photographs of the Moon,' by Prof. PHILLIPS, with Communications from Profs. Challis and Piazzzi Smyth on the same subject.

Liverpool, Sept. 22, 1854.

'Second Report of the Committee, consisting of the Earl of Rosse, Rev. Dr. Robinson, and Prof. Phillips, appointed by the General Committee at Belfast to draw up a Report on the Physical Character of the Moon's Surface, as compared with that of the Earth.'—The Committee have on this occasion to report that two of the eminent persons whose co-operation they had the good fortune to secure, Prof. Challis and Prof. P. Smyth, have sent in communications and drawings, according to the request of the Committee, and that some steps have been taken by one of their own members for at least putting in train for further progress the photographic experiments on the moon, of which some preliminary notice was delivered to the Hull Meeting. The new communications alluded to will be presented to the Section at this meeting.—On behalf of the Committee,

JOHN PHILLIPS.

Cambridge Observatory, Sept. 18, 1854.

'Drawings of different Features of a Portion of the Moon's Surface, comprising Plato, the Alps, the Valley of the Alps, and Cassini.'—These drawings were made under my direction by my senior assistant, Mr. Breen, with the Northumberland Telescope of the Cambridge Observatory. They were all sketched at sight, and were taken at various ages of the moon for the purpose of obtaining indications of the forms and configuration, both *in plano* and in relief, of the different parts of the portion of the moon's surface which has been allotted to me for mapping. They are, therefore, only to be considered as preparatory and auxiliary to a final delineation. A few micrometer measures accompany them. It is proposed hereafter to multiply the micrometer measures for the purpose of correcting the drawings, and connecting them together, and for reducing all to the same scale. On and after September 1, 1854, Mr. Breen made use of a shade of glass slightly green, the effect of which is to take off the glare of strong moonlight, and to produce a tint by which the distinction between the lighter and darker shades on the moon's surface is more perceptible. To my eyes the greenness of the shade soon vanishes, and the eventual tint is a subdued white. (On removing the green glass and looking at the moon's surface the complementary pink colour is strongly developed). All the necessary explanations are given on the cards upon which the drawings are made, and in the notes attached to them.

JAMES CHALLIS.

Royal Observatory, Edinburgh, Sept. 10, 1854.

Supposing that the Moon Committee may like to hear something, though ever so little, from their workmen, I beg to send you herewith a sketch of the Mare Crisium, the portion of lunar surface you charged me with, and add a few words in explanation. Little has been done or been possible on account of the equatorial instrument, recommended by the Board of Visitors, not yet having been supplied. The present instrument, serving the temporary purpose, has so many stric in its object-glass, that it will not bear a higher magnifying power than 200, and that is the highest we have. It has not been, therefore, possible for me to meet the main request of the Committee, to draw "the lunar details with a magnifying power of 1,000." Arrangements of the methods to be pursued appeared to be the point where I might be of most, if any, service. First amongst these appeared to be, perfect independence of older observations and drawings either by myself or others. To this end I chose only such evenings as allowed sufficient length of time to draw in the whole Mare Crisium; and the whole was drawn on each occasion at the eye-end of the telescope, *de novo*. Each such drawing was packed away, as soon as made; and it was not until lately that they were compared with each other, and a mean drawing formed from the whole, and compared with Beer

and Maedler's map. Secondly, as to the pigmental means for making the drawing:—Having laid down the principle, that whatever is drawn shall be done at the telescope, nothing touched up after, and that everything visible shall be inserted, it was soon found that colours were necessary, as well as light and shade. Water-colours were tried, but abandoned, on account of the difficulty of inserting light on dark, which is often a characteristic feature of the lunar surface than dark on light. Oil colours were, therefore, eventually employed. In this medium I have now five sketches,—two in the waning light, two with the perpendicular light, and one with the increasing solar light at the moon. The last is that which I send herewith. It is a very difficult view to get, on account of the general co-existence of twilight; and hence, perhaps, in no previous maps that I have seen is there justice done to the completely altered contour of the whole Mare at this age of the moon, by reason of the then peculiar brilliance of a promontory of matter running down from Proclus into it. Hoping that you will understand that this communication is only sent as being a business report,—sent in duty and respect to the Committee at a stated time, and not on account of a successful research,—I remain,

C. PIAZZI SMYTH.

—These documents were accompanied by three large drawings of the Mare Crisium, after sunrise on that part of the lunar surface, at mid-day on the same, and before sunset, executed by Prof. Smyth; and by diagrams of Plato and the regions around it by Prof. Challis. In commenting on the results of the labours of the Committee during the past year, Prof. PHILLIPS drew attention to the methods employed by Prof. Smyth and Prof. Challis, which combined instrumental measures, eye sketches, and finished designs, and presented the varied aspects of the lunar surface, depending on the angle of illumination which had been expressly indicated by the Committee. He remarked on the continually growing exactness with which the telescope was applied to the delineation of the lunar scenery, which, to inferior instruments appearing smooth and even, revealed itself to more powerful scrutiny as altogether uneven, mostly rugged land, deeply cut by chasms, and soaring into angular pinnacles. The so-called seas, under this scrutiny, appear destitute of water, and their surface, under low angles of incident light, becomes roughened with little points and minute craters, or undulated by long winding ridges of very small elevation, comparable to the gravel ridges of Ireland and Scandinavia. On the question thus and in other ways raised for discussion, whether the moon, now devoid of water on the face she presents to us, contains traces of ancient watery movement, Prof. Phillips called attention to the numerous straight rifts and winding "Rillen," as the Germans call them, which, to clear telescopes only, reveal themselves in many tracts of the lunar land. And turning to Gassendi, the mountain which, in connexion with Mare Humorum, had been allotted to himself for his survey, he described its long encircling wall, broken through towards Mare Humorum, duplicate in one part, crossed by three deep narrow clefts in another, and partly interrupted by a great oval crateriform appendage, which is broken down or deficient on the side against the great crater of Gassendi. Here, concentrating to, or diverging from, the smaller crateriform appendage, are seen, but only with good instruments, many branching ridges and hollows, whose stems are towards the small crater, and whose extremities reach towards the mountains in the middle of Gassendi. If these are branching tracts of volcanic matter poured out from the smaller crater, their slope will be from it; if they be due to alluvial action, their slope will be towards it; and this is a test which perhaps can be accurately applied in this situation, by carefully delineating the shadows which fall in morning and evening from the lofty walls of the crater. The Report contained also references to the progress made by the Committee and the Liverpool Photographic Society in obtaining light-pictures of the moon.

Mr. NASMYTH, on the question of ancient traces of water in the moon, maintained the negative,



and expressed his conviction that all the appearances sometimes relied on for the affirmative were explicable by considerations of the peculiar character of the old volcanic operations on the moon.

'On the Origin of the Submarine Telegraph and its Extension to India and America,' by Mr. J. W. BRETT.—After claiming for himself and his brother, Mr. Jacob Brett, the honour of being not only the first inventors, but also the first projectors, of a Submarine or Oceanic Telegraph, the author proceeded to give an account of the difficulties and prejudices they encountered in establishing the first submarine telegraph, which has now been successfully working for three years between France and England; and stated that he had established the submarine telegraph between England and Belgium with equal success, which had been in operation since the 1st of May, 1853. He then explained some of the difficulties he had encountered in laying down the two submarine lines in the Mediterranean in July last,—especially in passing a depth exceeding, by 100 fathoms, what had previously been ascertained to exist on the route between Piedmont and Corsica. The depths encountered between England and France, and England and Belgium, did not exceed at their maximum 30 fathoms; whereas the submarine cable was laid down in the Mediterranean at a depth of 350 fathoms, exceeding about eight times that of the English Channel. It was the general impression that the submarine cable would part by the great strain it would encounter in passing these great depths,—for which reasons he was strongly advised, and more particularly by one of the most able and experienced officers of the Sardinian Government, who accompanied and aided the undertaking, to make a détour of about 8 miles by the islands of Gorgona and Caprija, where the soundings were known not to exceed 100 fathoms; but the great point to be considered was, whether he would not incur the risk of a total loss of the cable by not doing so. The prudence of these arguments Mr. Brett said he fully admitted; but that it was a question he was determined to solve at once,—for as this telegraph was not a telegraph to Corsica, but part of a line to India, to be shortly completed to Africa, where still greater depths must be encountered, it was necessary to test the fact. He then explained the difficulties they encountered in paying it out, when, after the line had been paid out, as he believes, along the top of a submarine mountain for some miles at a depth varying from 180 to 200 fathoms, it suddenly, as he believes, came to the edge of a precipice, making a total of 350 fathoms (exceeding by about 100 fathoms any depth marked in the various charts on this route), where it ran out with frightful velocity; and had the cable been less strong the whole must, of necessity, have been lost; and they were compelled, nevertheless, to anchor by the electric cable all night, to restore the injury that had occurred; but he felicitated himself upon the experience thus gained from his determination in taking the deepest route, as it had led to many valuable suggestions necessary to successful operations in great depths; and the able Commander, the Marquis Ricci, who up to this time had been in doubt of its success, then admitted that this kind of cable contained such remarkable elements of strength in its form and combination, that he believed only certain improvements to be necessary (on which we had been consulting,) to successfully lay it down even in the greater depths of the Atlantic. Mr. Brett, in conclusion, explained his reasons for selecting this line to India, *via* Egypt, in preference to the line by the Italian peninsula, which would ever be impeded by the jealousies and restrictions of the petty States; whereas, to the shores of Africa, the Mediterranean Telegraph passed through only the States of France and Sardinia, who had encouraged it by liberal guarantees, and admitted that all communications in whatever language should pass unrestricted through their States. From Africa he stated he had two plans in contemplation for its extension to Egypt—one, a line dropped in the Mediterranean in the shallow line near the coast, and another buried in the sand along the shore,—both of which he was satisfied might be laid secure from derangement of any

kind.—He then concluded with a statement of the labour and attention he had given for many years in preparing for the telegraph to America, and of the depth, on the proposed line, as recently ascertained by Lieut. Maury, of the United States, with some estimates of the weight and cost; and stated that a return of 100*l.* to 150*l.* per day would give a fair interest on the necessary capital; that his plan comprised several lines of communication; and that he entirely deprecated the idea of a single line of communication, which he believed could not be done.

The hour being late, this Paper was reserved for future consideration.

#### SATURDAY.

'On the Loss of the Tayleur, and the Changes in the Action of Compasses in Iron Ships,' by the Rev. Dr. SCORESBY.—There were perhaps few subjects, he said, of more practical consideration and importance than the one which he had the honour of submitting to the Section on that occasion; and if of more importance and consideration in one place than another, he might say the port of Liverpool ought to stand pre-eminent in respect of the consideration due to compass guidance in iron ships. The importance of determining not merely the principles which occasion the original development of the magnetic condition in iron ships, but also of determining the principles upon which changes in that development would take place, was, of course, in relation to the extent to which iron was employed in the construction of vessels navigating the ocean; and so great had been the increase in the adoption of iron as a material for ship-building, that in many ports where they were accustomed to build a large number of vessels, it would be found that nine-tenths of the vessels building were entirely iron vessels. He did not know but that pre-eminence of proportion might exist here; but, at all events, the application of iron as a material for the construction of ships was rapidly increasing. There were certain principles connected with the navigation of iron ships which were universally admitted. Those principles were, that iron, being more especially disposed to the magnetic condition, was a material, of course, calculated above all others to disturb the action of the compass on board the ship. Again, it was also admitted, that there were difficulties in the navigation of iron ships, arising not merely out of the original or primarily magnetic condition and disturbing influence of the iron, but also in respect of certain changes which had been held as mysterious—changes which took place not unfrequently in regard to ships whose magnetic condition had been supposed to be very well ascertained. It would be the leading objects of the communication he was about to make, to endeavour to develop the principles on which the peculiar magnetic condition of iron ships was distributed, and to show the principles and circumstances under which changes must necessarily take place. The melancholy case of the Tayleur afforded an example of the most impressive kind to connect with the general bearing of this important subject. As many of the Section might not be aware of the circumstances connected with the wreck, he would sketch, very hastily, a few points necessary to carry on the subject. The ship Tayleur, a new vessel, bound to Australia, sailed from Liverpool on Thursday, the 19th of January of the present year. She was 1,979 tons burthen, new measurement, and she had on board about 458 passengers.—the crew and passengers altogether making a total of 528 persons. She left the Mersey about noon on the Thursday to which he had referred. The pilot left her between seven and eight o'clock in the evening in a position between Point Lynas and the Skerries.—[The Rev. Doctor here referred to a map, which he said had been kindly afforded him for the occasion by Mr. Towson, and which admirably illustrated the positions he should have to refer to in the course of his paper.]—On Friday she encountered very heavy weather; and about eight o'clock on the following (Saturday) morning it was for the first time ascertained that there was any material difference between the compasses. There were three compasses on board; but he would only refer to two of them. One of the two was near

the helmsman, and was the one by which he steered; and the other was near the mizenmast. Both of these compasses had been, what is called, adjusted by permanent magnets; so that if the principle of adjustment had been correct, they should not either have changed or differed from each other. Trusting to the compass near the helmsman, the captain had the idea firmly impressed upon his mind that he was sailing fairly down, almost mid-channel; at all events, in a good position for navigating the Irish Channel. The other compass indicated a difference of about two points. The captain, however, judging from certain indications which he had noticed previously, assumed that the wheel compass was the correct one. In the course of a few hours—about half-past eleven o'clock on the same morning—the wind having increased, and a heavy sea setting up the Channel, the ship made rather a rapid progress, when they came suddenly in sight of land on the lee beam, in such a position that there was necessarily a great difficulty,—in this case (according to the measures pursued) an insurmountable difficulty—in avoiding the land. An attempt was made to wear the ship round. This failed, and then an attempt was made to use the anchors to bring her up. Both the cables snapped on the occasion, and the ship was then left helpless, driving broadside upon the rocks of Lambay Island. The result was the fearful catastrophe with which most persons were acquainted; namely, the loss of about 290 lives. Out of 100 females who were on the ship only three escaped upon that melancholy occasion. Investigation into the cause of the accident was naturally suggested, and the Board of Trade instituted inquiries in two departments; one by means of Capt. Walker, of the Navy, the other by means of the Marine Board of Liverpool, of which Mr. Towson was the Secretary. Capt. Walker, in his Report, ascribed the loss of the Tayleur to the captain's supposition that the compass by the helm was correct. The Local Marine Board came to a conclusion which he would notice by an extract from their Report. After stating that Capt. Noble had given very great attention to the ascertaining of the correctness of his compasses and verifying their action on different occasions, they proceeded in their Report to say that, "notwithstanding these precautions, it appears to this Board that the Tayleur was brought into the dangerous position in which the wreck took place through the deviation of the compasses, the cause of which they (the Marine Board) had been unable to determine." The Board called particular attention to the fact, "that numerous instances had been brought under their consideration of compasses having proved greatly in error on board both wooden and iron ships in the navigating of the Irish Channel, which deviation, it continued, was not accounted for by any theory hitherto propounded." Now he (the Reverend Doctor) would show that there were principles which not only reasonably, but, he would say, demonstrably established the leading principles on which not only the original development of the magnetism of iron ships was distributed, but likewise the circumstances under which changes in that development must necessarily take place. This subject was brought by him before the Meeting of the British Association at Oxford, in 1847, when he read a paper, showing experimentally and illustratively that the adjustment of the magnetism of ships by fixed and permanent magnets was not only delusive, but calculated to become the occasion of serious danger. And if the opinions given by Capt. Walker and the Liverpool Marine Board were true—if there was a relation between this catastrophe and the misguidance of the compasses—then it would be easy to show that had the compasses not been corrected or adjusted by means of permanent magnets, the captain of the Tayleur would have been abundantly warned, and therefore in a far better position for securing the safety of the ship. It was a matter well known, not merely that iron became magnetic by virtue of the inductive influence of the earth, but, as he had elicited and explained the fact so long ago as the year 1820, in communications to the Royal Society of Edinburgh, that the magnetism so developed could be augmented, controlled, or destroyed by

mechanical action. Proceeding on these principles, he had given a communication at the Meeting of the British Association at Oxford in 1847, showing the necessary instability of the magnetic distribution in ships built of iron; and thence inferring that the plan of correcting, or adjusting, the compasses on board such ships by the antagonistic action of steel magnets, must be delusive and might be extremely dangerous. In the case now more particularly referred to—that of the *Tayleur*—where the compasses were adjusted by fixed magnets, the result (according to the Reports published by the Board of Trade) was just in accordance with the views he had thus stated at Oxford—the ship's magnetism did obviously change, and the permanent magnets seriously augmented the new errors produced on the compasses. And though in this instance the direction of operation of the adjusting magnets was but incidental, the effect, so far as the authorized reports may guide us, was fatal;—so that had there been no adjusting magnets the captain would have been guarded against the delusion that he was making a fair course down the Channel, and would have been in a very different position as to safety. The magnetic condition of iron ships and the circumstances under which the chief intensity of their magnetic action was developed, could be well illustrated by a few experiments with an iron bar—as first, showing the simple effects of the earth's induction, and secondly, the augmenting or changing influence of mechanical violence. Thus, an iron bar, entirely neutral as to its molecular magnetism, as shown by its being devoid of influence when placed horizontally, in an east and west line, near a compass, became strongly magnetic when placed upright, or proximately so. But its polarity was reversed by turning it with the contrary end downwards, and it again became neutral when laid on the horizontal east and west line. If the same bar, however, while held in an upright position, or inclined in the axial direction of the earth's magnetism, were subjected to percussion or other mechanical violence, not only did its magnetism become much more powerful than that of simple induction, but it strongly exhibited its augmented polarity, when placed in the east and west equatorial position, and, however it might be moved about and swung round, its polarity remained the same. Having proved these two propositions by experiment, Dr. Scoresby went on to apply them to the case of iron ships, and to point out that, in consequence of the percussive action to which the material was exposed while the ships were in course of construction, it became as intensely magnetic as it was possible for malleable iron to be. This augmented magnetism, however, was not permanent or fixed, but, under different circumstances, as to the relative directions of the ship's magnetism and that of the earth, was easily changeable, and liable necessarily to be changed. The magnetism developed by mechanical violence could be readily neutralized or changed, under a proper change of conditions by other processes of mechanical violence. Thus, if the bar of iron magnetized by hammering were held in the reverse direction from that in which the magnetism had been developed, and again hammered, the polarity would not only be altered, but reversed. Again, after well hammering the bar in a vertical position, let it be quietly reversed, the lower end, or north pole, as hammered, now being upwards, and let one of its extremities be then presented to a delicate compass; the deviating influence in this case would be but small, perhaps a few degrees only, from the influence of the earth's magnetism being now opposed to the augmented magnetism of the bar. If, while held in this position, a single blow were struck on the bar with a hammer, the needle would be seen to fly round as if by magic, and settle at a point of deviation perhaps four or six times as great as before. The result of another experiment which he was in the habit of showing with elongated plates of iron, to elucidate the phenomena of mechanical vibrations or violence, was still more remarkable. Here he should employ a couple of thin iron plates laid flat on each other,—and it would be seen, when their condition was neutral, that, though held close to the compass, horizontally east

and west, there was no action whatever on the needle. But after holding the plates upright and bending them, however slightly, or striking them with the hand, or merely giving them a vibratory shake, and then presenting them as before to the compass, the iron was found to have become very strongly magnetic, the end which was downward repelling the north pole of the needle. Reversing the position of the plates, while held upright, let the vibratory action be repeated, and the end formerly repelling will now be found to attract the north end of the pole. Repeating the vibratory action, while the plates were held horizontally in an east and west line, the magnetism would be found, on bringing the plates to the test, to have disappeared, all action of the compass having gone. To meet objections which might be probably offered against the application of his experiments on thin plates and small bars to the case of iron ships, he had made experiments on rolled iron plates, of the same kind as those of which ships were generally built; and had ascertained that the magnetism in these also was changeable and controllable like that in bar iron, under the requisite change of position, by vibratory or percussive action. He had also made experiments on a portion of a plate cut out of the side of a ship recently built, with effects exactly similar. The general results of his experiments went to the establishing of the fact, that, besides the two denominations of magnetism ordinarily received, that of simple terrestrial induction and that of permanent independent magnetism, there was another denomination corresponding with neither; not being absolutely controllable, like the former, by terrestrial influences, nor capable, like the latter, of resisting all kinds and modes of mechanical violence. To this third denomination he gave the name of Retentive Magnetism. Dr. Scoresby then exhibited experiments with three sets of plates, two of iron and one of steel, for the illustrating of these several qualities of magnetism:—1. That of simple terrestrial induction by iron plates free from polarity, which became magnetic or changed their magnetism according to the position in which they were held. 2. Retentive magnetism, as illustrated by similar plates, which had been previously magnetized by bending and blows,—such magnetism appearing as if permanent when the plates were moved about, without being vibrated or bent. And, 3rdly. Permanent magnetism, as illustrated by an elastic steel plate, which, however violently it was bent or struck or vibrated, or in whatever position, still preserved its magnetism unaltered. Now this retentive magnetism was the quality which had been prevalently considered as permanent; which, he was prepared to show, both by experiments on iron and facts of experience, was by no means a fixed quality. On the contrary, the long continued vibration of a ship under steam, and much more so the straining of the ship in a heavy sea, under the circumstance when the terrestrial induction might be acting in a very different direction from the original axial polarities of the ship, would be sufficient to change the direction of the magnetism originally developed in the course of her construction. Hence, much would depend, in respect of the mechanical action of the sea, on the position in which the ship had been built. In the case of the *Tayleur*, when he first heard of the catastrophe, and had read the evidence, he had stated to some friends, at Torquay, that he would venture to predict that she had been built with her head northward. He had found, on inquiry, she had been built with her head nearly north-east. Here, then, were the precise circumstances for expecting a change in the ship's magnetic distribution. Having been built with her head to the north-east, she had a certain magnetic distribution accordingly, and when she began to strain, with her head to the south-west, that distribution was necessarily changed, and the first effect of it had been to produce a great difference in the two compasses adjusted by fixed magnets. If the captain had been aware of the changes which might, and most probably would, take place, when the ship began to strain in a different position from that in which she had been built; if he had known that the compasses, having so large an original deviation as 60°, might vary as

much as two, or three, or even four points, he would have known, of course, that he must place no reliance upon them. It did not follow, however, that compasses were of no use, because, under certain circumstances, they were liable to change. They should be, and were, of great use for all that. But what he wished to impress upon them was, that by attempting to adjust a changeable influence by a permanent influence, they were liable to produce an aggravation of error. It was most important, therefore, for safety in navigating these vessels, that captains should be made aware of the liability of the compasses to change and so to mislead them; that they should know the circumstances under which, in accordance with natural laws regulating and applying the earth's inductive action, changes were most likely to occur; that they should be always watchful of opportunities for determining the true magnetic direction with reference to their compasses, by observations of the sun and stars; and that by providing a place for a standard compass aloft, (on the plan he, Dr. Scoresby, had suggested and adopted in 1829,) as far from the deviating influence of the body of the ship as possible, they might have guidance sufficient, with some small allowances, for steering a correct magnetic course. And with the precautions and means such as might thus be applied, he, Dr. Scoresby, did not doubt but that the difficulties, in respect of compass guidance, in the navigation of iron ships, might be mainly and practically overcome.

The general experimental results and the principles sought to be elucidated, it should be added, were illustrated by a variety of references to actual cases of compass changes in iron ships, which we have not included in our abstract of the paper.

'On the Inefficiency of the Aids of Science at present in connexion with the Compasses of Iron Ships,' by Mr. J. T. TOWSON, Secretary to the Local Marine Board.—In the name of the merchants and shipowners of Liverpool, he implored the attention of the Section to this important subject, in the hope and belief that if the members should respond to that appeal, they would be able, before the next Meeting, to confer the benefit they sought, not on their account alone, nor in consideration of the vast amount of property involved, but for the sake of the vast amount of human life which was continually being jeopardized and lost. They made their request in the belief that the compasses of iron vessels, if aided by all the appliances which science at present afforded, and adjusted and managed by the most talented individuals whom owners could engage, were still unworthy of confidence. Dr. Scoresby had correctly arranged magnets in three classes:—permanent, retentive, and inductive. The term "retentive" ought, in his opinion, to receive the sanction of the Section. The Rev. Doctor had relieved him from a great amount of difficulty in expressing his opinions on the subject. He did not dissent from anything that he had said; but he wished to point out what he believed to be another source of error in connexion with compasses, deserving their serious consideration. He alluded to the change that took place in the inductive magnetism of a ship when she heeled over. In 1846, Mr. Walker, the Queen's Harbour-Master at Plymouth, obtained the permission of the Admiralty to examine the compasses of the *Recruit* when heeling; and the result was, that the error from this cause was found to amount to nearly one-half the maximum error experienced when on an even beam. He believed that many of the errors in compasses on board both wood and iron ships, which neither the mariner nor the compass-adjuster could account for, was to be attributed to "heeling." In the only six cases in which he had been able to obtain information of the heeling of iron ships, it had been shown that considerable errors had arisen from this cause; but these, of course, were not sufficient to establish a theory. He thought, however, that the disastrous loss of the *Tayleur* might possibly have arisen from this cause. All the tables of deviations of compasses of ships that had heeled had the maximum amount of error, arising from heeling, when the ship's head was directed within two or three points of the magnetic poles, the same being



the point of no-deviation when the ship's beam was horizontal. In all cases, the north pole of the compass had been drawn towards the point to which the ship heeled. Besides collateral means adopted for correcting the compass, there were two systems in use for that purpose: Capt. Johnson's system of swinging the ship, and tabulating the results, which was exclusively employed in the Royal Navy; and the Astronomer Royal's method of compensating the compasses by means of magnets, which was almost exclusively resorted to in this port. The objections to Capt. Johnson's plan was, that the corrections were liable to be employed the wrong way. His experience in the examination of about 2,000 masters of merchant vessels had convinced him of the soundness of that objection. There was a general tendency in practice to come to a wrong conclusion on the subject. The mariner knew that westerly deviations indicated that the north end of the needle was drawn to the west; and came to the conclusion, that if his compass had a westerly deviation, it must cause an object bearing north to appear westerly, whereas it would really appear easterly; and he had known the same mistake made on board ships in the Royal Navy. The most formidable objection to the Astronomer Royal's system was, that the magnetic poles of the compensating magnets were liable to change or to vary in their intensity. Theoretically, this appeared probable; but he had no well-established fact to illustrate it. The change of retentive magnetism, deviation from heeling, and the change produced by going to the other hemisphere, were defects common to both systems. He had never met with a captain who could tell him the original deviation of his compass. In the case of the *Taylor*, the deviation of her steering compass was 60°, of her compass before the mizenmast, 40°. Was there ever such a case in the Royal Navy? Lieut. Pasco, when appointed to the *Jackal* in 1845, was dissatisfied with a deviation of 25°, and obtained permission of the Admiralty to have the compass replaced, when it was reduced to 18°; and no doubt the masters of merchant vessels on this point would be equally prudent if they knew what the real amount of original error was. In conclusion, Mr. Towson expressed his cordial concurrence in the observations made by Dr. Scoresby, as to the necessity of incessant watchfulness, and the danger of implicit confidence, and reiterated his appeal to the Section to give the subject its best consideration.

Col. SABINE responded to the appeal, and assured Mr. Towson that the subject would have their best and anxious attention.—After a short discussion,

Col. SABINE said, that he fully concurred in all the observations which had fallen from the two gentlemen who had so ably brought the subject before the Section; and the conclusion at which they had arrived was in strict conformity with the instructions issued by the Admiralty, viz. to use the utmost precaution to ascertain, in every change of position or circumstances, the accordance of their compasses, and to test their accuracy on every occasion which presented itself.

Mr. HOPKINS gave an account of some experiments 'On the Effect of Pressure on the Temperature of Fusion of different Substances.'—The author began by stating that it was most fortunate for the success of his researches that, in the very commencement of them he had applied to Mr. W. Fairbairn, who had, with the utmost enthusiasm, entered into his views, and aided him to the utmost extent of the incomparable facilities afforded by his celebrated establishment. Mr. Hopkins then gave a short description of the apparatus which he had used, and the successive steps by which failures in some contrivances had led him to that which was ultimately found to answer. In particular how, from the enormous pressures to which the substances were subjected, they found it impossible to use glass to see what was going on within the cylinders in which the substance to be experimented upon was inclosed; which difficulty had been got over by causing an iron ball to rest on the top of the substance within the cylinder, while its presence deflected a small magnetic needle outside, but the instant the melting of the substance inside

permits the ball to fall, the magnetic needle returning to its position of rest indicated the fact. The use of this needle made it necessary to make the cylinder of brass; and Mr. Hopkins stated that with the first cylinder they used, they were surprised to find when enormous pressures were laid on that the liquid within wasted; the cause of this they long sought to discover in vain, until at length they found that it was escaping through the very pores of the metal in thousands upon thousands of jets so minute as to be almost imperceptible. This they remedied by greater care in the casting of the cylinder, and hammering it well on the outside. The method of laying on the pressure was by a piston well packed and forced down by a lever. This they adopted as the simplest means of getting a numerical estimate of the actual compressing force.—Mr. Hopkins then described the method by which the friction had been determined which opposed the motion of the piston, and so diminished the pressure by so much. This was done by noting the weight required to drive the piston in a certain small distance: this, less by the friction, was equal to the compressing force; then noting the weight which allowed the piston to return exactly to its first position: this, together with the friction, is equal to the compressing force; but as these two compressing forces are equal, the friction is equal to half the difference of the two weights used, and is then a matter of very simple calculation. Mr. Hopkins then gave the results of the experiments, of which the following are the most important:—

Substances experimented upon.	Pressure in lbs. to the Square Inch.	Temperature Fahr. at which it liquefied.
Spermaceti . . .	0 7,790 11,880	124° 140° 176° 30
Wax . . . . .	0 7,790 11,880	148° 166° 176° 5
Sulphur . . . . .	0 7,790 11,880	225 275° 5 285
Stearine . . . . .	0 7,790 11,880	153 153 165

Of course when the weight 0 was on the piston, the substance was under atmospheric pressure, or about 15 lb. to the square inch; and the pressure of 7,790 lb. per square inch was just that at which the Britannia Bridge had been raised. Mr. Hopkins had also tried the metallic alloys which fuse at low temperatures, but had not detected any elevation of fusing temperature required by increasing the pressure; but these experiments required to be repeated and confirmed before they could be relied upon.

'On the Density of various Bodies when subjected to enormous compressing Forces,' by Mr. W. FAIRBAIRN.—The author briefly explained the apparatus which he made use of, and gave a sketch of the results at which he had arrived; but as these were almost entirely given in tables, we are unable to detail them without the aid of these, which are too voluminous for insertion in full. Among other matters of extreme general interest, he stated that, besides these common pressures of 7,000 lb. to the square inch, and 11,000 lb., such as used in Mr. Hopkins's experiments, he had applied pressures of 50,000 lb. and 90,000 lb. to the square inch, or what would be equivalent to the weight of a column of water over 33 miles in height. Under this enormous pressure, clay and some other substances had acquired all the density, consistency, and hardness of some of our hardest and densest rocks.

'On an easy Method of making thin Glass Cells for mounting Microscopic Objects in Fluid,' by Mr. C. BROOKE.—The durability of thin glass cells, compared with cells consisting of a ring of cement or varnish laid on the slide by a brush, is well known to microscopists; but they have been hitherto somewhat difficult of construction, and therefore expensive. The proposed mode of making them consists in clamping the piece of thin glass between two pieces of gun-metal, having each a cylindrical hole. The pieces are clamped by two screws, the holes being kept concentric by two steady-pins. One of the opposed surfaces is ground very flat, and the other has a narrow raised rim, about 0·1 inch wide, covered with very thin leather surrounding the hole, to insure a firm and uniform pressure round the intended aperture. After scratching round both sides of the glass revealed by the holes

with a writing diamond, the circular piece may be pushed out without any risk of cracking the remainder of the glass.

M. FOUCAULT'S 'Nouvelles Expériences sur le Mouvement de la Terre au Moyen du Gyroscopie.'—The author spoke in French, but very distinctly, and the apparatus was so simple, beautiful, and exquisitely constructed, that the experiments all succeeded to a miracle, and fully interpreted the author's meaning as he proceeded. The gyroscope is a massive ring of brass connected with a steel axis by a thinner plate of the same metal, all turned beautifully smooth, and most accurately centered and balanced; in other words, the axis caused to pass accurately through the centre of gravity, and to stand truly perpendicular to the plane of rotation of the entire mass. On this axis was a small but stout pinion, which served when the instrument was placed firmly on a small frame, containing a train of stout clock-work, turned by a handle like a jack, to give it an exceedingly rapid rotatory motion on its axis. But to this clock-work frame it could be attached or detached from it instantly. This revolving mass was only about 3 inches wide, and four of them were mounted in frames a little differently. The first was mounted in a ring, attached to a hollow sheath, which only permitted the axle and the pinion to appear on the outside, so that it could be laid hold of, or grasped firmly in the hand, if the pinion were not touched, while the mass inside was rapidly revolving without disturbing that motion. By this modification of the gyroscope, the author afforded to the audience a sensible proof of the determination with which a revolving mass endeavours to maintain its own axis of permanent stable rotation, for upon setting it into rapid rotatory motion, and handing it round the room, each person that held it found himself forcibly resisted in any attempt to turn it round either in his fingers, to the right hand or left, or up or down, or in his hands if he swung it round. So that the idea was irresistibly suggested to the mind, that there was something living within which had a will of its own, and which always opposed your will to change its position. The second modification presented the mass suspended in a stout ring, which was furnished with projecting axles, like the ring of the gymbal. These axles could be placed in a small frame of wood bushed with brass. This small frame, when placed on a piece of smooth board, could be turned freely round by turning the piece of board on which it rested as long as the gyroscope was not revolving, friction being sufficient to cause the one to turn with the other; but, when the gyroscope was set rapidly revolving, in vain you attempted to turn the frame, by turning the board on which it rested, so determinedly did it endeavour to maintain its own plane of rotation, as quite to overpower the friction. In the third modification of the gyroscope it was suspended in gymbals, so exquisitely constructed that both the gyroscope proper and the supporting gymbals were accurately balanced, so as to rest freely when placed in any position in relation to the earth. By this the author showed most strikingly the effect of any attempt to communicate revolving motion round any other axis to a mass already revolving, for, on placing the gymbals in a frame of wood while the gyroscope was not revolving, it remained quite steady; but, when thrown into rapid revolving motion, the slightest attempt to turn the frame round to the right or to the left was instantly followed by the entire gyroscope turning round in the gymbals, so as to bring its axis to coincide with the new axis you endeavoured to give it, with a life-like precision, and always so as to make its own direction of revolution be the same as that of the slightest turn you impart to it. Having thus demonstrated the necessary effect of combining one rotatory motion with another, he then proceeded to demonstrate palpably that the earth's revolving motion affected the gyroscope in precisely a similar way. Having, by the screw adjustments, brought the gyroscope, in gymbals, to a very exact balance, it remained fixed in any position when not revolving. But, rapid rotatory motion having been communicated to the gyroscope mass as soon as the gymbal supports are

placed on the stand, you see the entire apparatus, slowly at first, but at length more rapidly, turn itself round, nor ever settle until the axis, on which the gyroscope is revolving, arranges itself parallel to the terrestrial axis, in such a sense as to make the direction of the revolving gyroscope be the same as that of the whole earth. He next showed that the determination with which it did this was sufficient to control the entire weight of the instrument, though that amounted to several pounds, for, taking the ring gyroscope, from the side of the ring of which a small steel wire projected, ending in a hook, the wire coinciding with the prolongation of the axis of the gyroscope: of course, when not made to revolve, the hook, if placed in a little agate cup at the top of a stand, would permit the instrument, by its weight, to fall instantly, as soon as the support of the hand was taken from it. But, upon imparting to it rapid rotatory motion, it stood up even beyond the horizontal position, so as to bring its axis of rotation nearly to the same inclination to the horizon as the axis of the earth, while the whole acquired a slow rotatory motion round the point of the hook; and so steady was its equilibrium while moving thus, that a string being passed under the hook and both ends brought together in the hand, the whole may be lifted by the cord off the stand and carried revolving steadily about the room. Next, to show the motion of the earth sensibly, he placed the gymbal gyroscope suspended freely by a fine silk fibre in a stand with the lower steel point of its support resting in an agate cup; a long light pointer projecting from the ring carried a pointed card which passed over a graduated card arch of a circle placed concentrically with the gyroscope; upon imparting rapid rotatory motion to the gyroscope the index was seen as the earth moved to point out the relative motion of the plane of rotation exactly in the same way: the law of the motion being also the same as that of the well-known pendulum experiment. Lastly, he set the ring gyroscope in motion, and by placing a small pointed piece of brass at the end of the axle on the ring, the instrument went immediately through all the evolutions of a boy's top on the floor, humming meanwhile loudly also.

These beautiful and most decisive experiments were received most enthusiastically by the Section,—and at their close a request was made to the Committee of the Section to solicit the officers of the Association to have them repeated at one of the evening meetings before the assembled Association. This having been acceded to, they were repeated in the Great Hall of St. George's Hall on Tuesday evening, Dr. Tyndall interpreting M. Foucault's French as he proceeded; and on Wednesday they were again repeated in the Committee-room of Section A, to a select number of the *savans*.—In the course of this exhibition Lord HARROWBY suggested that there was a mechanical compass needle quite free from the derangements of magnets.—To this Dr. WHEWELL and some of the others seemed to assent, although fears were expressed that the motion of a ship would not allow of its use on board.

'On Improvements in Submarine and Subterranean Telegraph Communications,' by Mr. C. F. VARLEY.—The inventor explained experiments he had made with gutta percha covered wires, varying from 30 to 1,500 miles in length, and showed an enlarged diagram, the original of which was drawn by the electric currents themselves decomposing solutions of ferrocyanide of potassium and nitrate of ammonia, with which the paper was saturated. These experiments showed, that the electric current did not appear suddenly at the extreme end; but the wire becoming charged by induction, like a Leyden jar, the current commenced gradually and did not reach its maximum power through 1,500 miles of wire until seven seconds of time had elapsed, and continued flowing out seven seconds after contact with the battery had ceased;—that with the ordinary telegraph systems such a wire would require fifteen seconds of time to make each signal, and as several signals are required for a letter only one average word could be transmitted per three minutes. Mr. Varley showed that with the submarine and subterranean wires between

Holland, London, Liverpool, and elsewhere, the Baines & Morse's instruments would only work at speeds too slow for commercial purposes; but that by aid of his apparatus these wires are now and have been for six months working at the required speed,—viz., twenty-five words per minute, for which 300 alternations of current per minute are required. The effects of the former two telegraphs with these wires when working fast is to run all the marks together, because the first electric impression has not ceased when the second is given; but his apparatus, by spilling the charge and reversing the current at every move of the key, produces rapidly alternating currents through the wire, which, though very weak at the extreme end of the wire, are quite sufficient to actuate his galvanometer relay, which actuates a local battery to produce the marks. The little arm on the axis of the relay, instead of striking against a dead stop, rubs obliquely against a gold spring, filing off the little film of air which otherwise would prevent the instant completion of the local circuit; gravity also is made to assist this contact. So sensitive is this apparatus, that four elements of a copper and zinc battery have been found sufficient to work from Manchester to London.—He added:—"Its advantages over the needle systems are,—it requires only one wire, gives a printed record of all communication, requires but one-fourth the power to actuate it, and is not interrupted by a comparatively defective insulation. It gains these advantages:—1st. By discharging the line-wire between every move of the key. 2nd. Gravity aiding electricity in making the relay contact, thus using the sun instead of the difference of the forces. 3rd. The sliding action of the relay contact by rubbing off the thin film of air, gives sure and instant contact with a very small amount of battery power. 4th. It will work through a very considerable amount of leakage from one wire to the other, because there is a current always flowing through the wire, rendering this apparatus peculiarly adapted for wires suspended in the air, and which leak from one to the other in damp weather, the surfaces of the intended insulators becoming coated with moisture." After dismissing the mechanical difficulties of laying a cable between England and America, he stated—"I have come to the following conclusions:—1st. If a wire could be suspended in an unbounded non-conductor or atmosphere with no conducting body near it, the transmission of an electric current through it would be instantaneous, no matter what the length of wire. 2nd. The approach of any conducting body to this wire would (by induction) reduce the speed of the transmission as shown in the 1,500-mile experiment. 3rd. In the case of a wire coated with a non-conducting substance (such as gutta percha) the induction decreases in the same proportion as the thickness of the coating is increased. 4th. The conducting power of a wire is in proportion to its substance, the induction in proportion to its surface." He then calculated the dimensions of a cable 3,000 miles in length, which would transmit 25 words per minute. "A copper wire one-sixth of an inch in diameter, coated with gutta percha to the depth of nearly half an inch, would be found capable by aid of my apparatus of transmitting 25 words per minute 3,000 miles; to work the ordinary telegraphs the copper wire must be three-eighths of an inch in diameter and coated with gutta percha three-fourths of an inch, making a total diameter of about two inches." Mr. Varley's apparatus has been in use six months, both by the Electric Telegraph and International Telegraph Companies.

'On Magneto-Electricity and Subterranean Wires,' by Mr. E. B. BRIGHT.

#### SECTION B.—CHEMISTRY.

'On the Production of Boracic Acid and Ammonia by Volcanic Action,' by Mr. R. WAREINGTON.—The author stated that in 1841 a friend of his had visited the island called Volcano, situated about twelve miles north of Sicily. The height of the mountain Volcano is 2,000 feet, and the depth of the crater 700 feet. The sides of this depression are covered with a white snow-like substance about one inch in thickness, beneath which is a

fused lava similar in appearance to the slag of a glasshouse. The boracic acid rises in vapour and condenses on the surface of the ground or in crevices at the bottom of the crater, from which about 2,000 tons are annually removed. It occurs connected with sal ammoniac, and the author considers that it exists originally beneath the surface as a nitride of boron. When steam is passed over this compound at a moderate red heat, it is completely converted into boracic acid and ammonia, which are for the most part volatilized with the aqueous vapours. This theory of the formation of boracic acid was considered by the author substantiated by the analysis of the slag beneath and the snowlike mass above. The former contained nitride of boron, and the latter boracic acid and ammoniacal salts.

'On the Concentration of Alcohol in Sommerling's Experiments,' by Prof. GRAHAM.—The author stated that when an open vessel is filled with a mixture of alcohol and water and exposed to the air, the alcohol goes off first and leaves the water; but if, as in Sommerling's experiments, a bladder be completely filled with dilute alcohol, the liquid will decrease in bulk, and the water pass through the membrane, leaving a much larger percentage of alcohol in the bladder. Dry membrane does not exhibit this phenomenon, for a jar, the mouth of which is covered with dry bladder, allows the alcohol to escape first. The author believed that liquids diffuse mechanically, by a kind of repulsive force of the same nature as that exhibited by gases. When common salt is added to water in a jar, membrane tied over it, and immersed in a vessel containing pure water, diffusion takes place in quantity which has a relation to the percentage of salt dissolved. Alcohol, however, exhibits an anomaly, in this respect, for the quantity of alcohol which diffused itself through the membrane, when 5 per cent. of alcohol was present in the liquid, was not increased when the percentage of alcohol was 10, 15, or 20. The phenomenon indicates a sifting or separating power to reside in membrane, and introduces a third element, in addition to diffusion and osmosis, into the discussion of the permeability of membranous septa. The author believed that Sommerling's experiment was an instance of arrested diffusion where more than 5 per cent. of alcohol was present. The action has some resemblance to the separating and secreting power of cells in the living organism, and may prove of great physiological interest, particularly if the action should be found to extend to albumen and other organic substances.

Prof. FARADAY considered the latter part of the paper exceedingly important, and expressed a wish that Prof. Graham would give his reasons for believing that liquids diffused owing to a repulsion between the liquid particles. Might not the attraction of the surrounding medium be wholly or partly the cause?—In answer to this Prof. GRAHAM stated that the phenomena characteristic of gaseous diffusion might be explained by an attractive as well as a repulsive force. In the diffusion of liquids, the same analogies were observed, as also the same intensity of action. From a bottle containing solution of alum, the sulphate of potash goes off first, and sulphate of alumina remains. Again, sulphurous acid and chloride of sodium may be boiled together and no hydrochloric acid is given off; but mix them in the diffusion vessel, and hydrochloric acid is given off, whilst sulphate of soda remains. Experiments on this subject are being accumulated by the author, and he sees every reason to consider that since gaseous diffusion can be most clearly explained by the repulsive view, liquid diffusion, so analogous to it, should be likewise explained.

'On the Occurrence and Chemical Composition of some Minerals from the South of Norway,' by Mr. D. FORBES.

'On the Fluorescence exhibited by certain Iron and Platinum Salts,' by Dr. GLADSTONE.—The peculiar blue appearance which presents itself on the surface of a solution of bisulphate of quinine, and some other substances, and which has received the name of "fluorescence," was noticed by the author in the red solution that results when a ferric salt in large excess is added to mæconic acid;



in the blue solution of ferrocyanide of iron dissolved in oxalic acid; in gallate of iron; and in the red solution formed when two equivalents of iodide of potassium are added to one of bichloride of platinum. Some observations were made on the composition of the salts in these solutions. In these iron salts the blue appearance was found not to be produced by extra-spectral rays, as observed by Stokes in the sulphate of quinine; but by rays which coincided to a certain extent with the ordinary blue ray, when a prismatic spectrum was thrown on to a vessel filled with the solution.

'On Collodion Negatives,' by Mr. G. R. BERRY.

—There appears to have been a great difficulty with many operators in obtaining that requisite intensity of negative collodion proof that shall by the after-printing yield satisfactory positive paper impressions. Selecting from the formulae generally followed, the author of this paper applied chloride of gold to the negatives he desired to strengthen, in the proportion of one grain to an ounce of water; and if this did not produce the desired result, he, after washing away the excess of chloride, floated over the proof a solution of sulphide of ammonium, varying in strength from 3 to 40 drops to 1 oz. of water. By this means, impressions so feeble as to be hardly visible by transmitted light became capable of yielding satisfactory results when used for printing. One difficulty remained:—the collodion film, at all times tender while moist, becomes so easily disrupted from the glass plate after the application of any of the strengthening processes, that the acquisition of a perfect negative was the exception and not the rule. This obstacle may be easily surmounted by allowing the photograph to dry after being developed and fixed either by cyanide of potassium or hyposulphite of soda, and then varnishing in the usual way. The photograph may then at any period of time be safely strengthened by repeating the gold and sulphide of ammonium process, observing to use rectified spirit of wine instead of water as the menstruum for the gold and sulphide. The tenacity of the varnish insures the safety of the collodion film and another coat of varnish completes the process. The author found that by the use of gallic acid in his silver bath the time of exposure was much prolonged in the camera, but the developed pictures proved of extraordinary intensity, and by this means he has at all times been able to produce satisfactory negatives, provided always that the collodions employed be not made sensitive by iodide or bromide of ammonium. It is true that a portion of gallate of silver soon precipitates, but silver solutions of moderate strength always retain in solution a portion of the precipitant; and this fact has been made use of by the author, Mr. Thomas and some others, by adding excess of moist iodide of silver to a new silver bath, to obviate the tendency it has to dissolve out the film of iodide of silver on the collodion plate. When using a bromide as the sensitizing agent, bromide of calcium has been found most effective; the nitrate of lime resulting from its decomposition in the silver bath having no detrimental action. The formula is as follows:—bromide of calcium 4 grains; dissolve in spirit of wine 2 drachms; add rectified ether 6 drachms, gun cotton *quan. suff.* The silver bath used must be 60 grains to the ounce. The bromized collodion is tolerably rapid, and, unlike most others, improves by age, even beyond a twelvemonth. The author has used the following formula with a simple 30 grain silver bath, and has obtained in all the varying conditions of light, whether of views or portraits, any amount of vigour desired:—The collodion: Take pure iodide of potassium, any quantity; triturate this in a glass mortar with spirit of wine, 54 over proof, until the spirit is unable to dissolve more of the iodide. Take of this solution 3 parts, sulphuric ether, free from acid, 5 parts; mix and dissolve in it gun cotton, to form a tough and rather thick film. The developing agent is, pyrogallie acid 2 grains, glacial acetic acid 20 drops, spirit of wine 1 drachm, water to make up 1 oz.

'On Collodion Photographs of the Moon's Surface,' by Dr. EDWARDS.

'On the Equivalency of Starch and Sugar in Food,' by Mr. J. B. LAWES and Dr. GILBERT.—

At the Meeting of the British Association at Belfast the authors had given a paper, 'On the Composition of Food in relation to Respiration and the Feeding of Animals,' in which they had illustrated, by reference to experiment, that as our current food-stuffs go, it was the amounts they supplied of the assimilable non-nitrogenous rather than those of the nitrogenous constituents, which measured both the amounts consumed by a given weight of animal, within a given time, and the amount of increase obtained from a given weight of food. The results, which formed the subject of the present communication, afforded further illustration of some of the points brought forward in the former one; but they had been arranged with reference to certain practical questions as well as to the more scientific bearings of the subject. Thus, those interested in the growth of sugar had long wished to obtain the introduction of the lower qualities of that article, for feeding purposes, duty free. The subject of the remission of the malt-tax, for the same object, had also frequently been agitated. According to the results of experiment (numerous tables of which were exhibited in the room, and in which the animals had been made to rely for about one-third of their total food upon the starch or sugar employed,) it appeared that absolutely identical amounts of the dry substance of the starch and sugar, which had thus been tried against each other, had been both consumed by a given weight of animal within a given time, and required to yield a given weight of increase. The identity, therefore, in feeding value, which had, from the known chemical relationship of these two substances, been hitherto assumed, was thus experimentally illustrated. If, therefore, sugar had no higher feeding value than starch, the relative prices, weight for weight, of sugar and the starchy grains generally used for feeding purposes, but which also supplied the needful nitrogenous constituents, would afford an easy means of estimating the probable economy of the use of the former. These new results were also consistent with direct experiments, published by the authors some time since, 'On the Comparative Feeding Value of Malted and Unmalted Grain.' It was true that malt and other saccharine matters might serve, in some degree, to give a relish to the food, and thus induce the animal to consume more, which in "fattening" is always a consideration; but this incidental benefit could not counterbalance much increased cost; hence, it did not seem probable that any extensive use of malt for feeding purposes would be such a boon as had been supposed. The proved equivalency of starch and sugar in food was also of interest in reference to some other of the views maintained by the authors in their former paper. Thus, it had been shown that a fattening animal might store up very considerably more fat than existed ready formed in its food; and this produced fat was, doubtless, in a great measure, due to the starchy and saccharine substances, which constitute so large a proportion of the non-nitrogenous constituents of our staple vegetable foods. It was these, too, which, in practice, served largely to meet the requirements of the respiratory function, which it had been shown, under ordinary circumstances, measured to such an extent the amount of food demanded by the animal system.

'On the Sewerage of Manufacturing Towns,' by Dr. WRIGHTSON.—The analysis, made by Dr. Wrightson, of a natural deposit from the sewerage of Birmingham, formed near the embouchure of several sewers opening into the Rea, showed the absence of all ammoniacal salts and the scarcity of phosphates, particularly alkaline phosphates, and, at the same time, the presence of a large quantity of protoxide of iron, also of zinc, copper, and other metals in the state of oxides and sulphurets. These metallic salts, in the sewers, absorbed the sulphuretted hydrogen and ammonia generated by decaying vegetable and animal matter, and, doubtless, contribute to promote the health of the town. The deposit contained when dried only 1·4 per cent. of nitrogen (not as ammonia) and 3·5 of earthy phosphates; but about 11·7 of protoxide of iron, besides zinc, copper, and

other metals to the extent of two or three per cent. The author hoped these facts would not be lost sight of by corporations and other bodies interested in economizing town sewerage.

FRIDAY.

SECTION D.—ZOOLOGY AND BOTANY, INCLUDING PHYSIOLOGY.

'On the Vascular System of the Lower Annulosa,' by Mr. T. H. HUXLEY.—Under the term Lower Annulosa the author included the Annelida, the Echinodermata, the Trematoda, the Turbellaria and the Rotifera,—in all of which there exists a peculiar system of vessels, which have hitherto been universally regarded as a blood-vascular system. Without considering the view he was about to lay before the Section to be fully demonstrated, the author said, that he had to offer very strong reasons for considering the prevalent notion to be incorrect. The vascular system of the higher Annulosa and of the Mollusca is in all cases a more or less specialized part of the common cavity of the body. The fluid which it contains is a corpusculated fluid;—the propulsive organ, if any special heart exist, is a contractile sac, connected by valvular apertures with that common cavity. Now, although it might be incorrect to say that the vascular system of the lower Annelida is invariably distinguished by characters the opposite of these, still there can be no question that, as a general rule, such is the case; and this circumstance is alone sufficient to raise grave doubts as to the homology of the two systems. But these doubts are greatly strengthened when we take into consideration certain facts, which the author proceeded to lay before the Section. In the Rotifera there is a system of vessels, consisting of a contractile vesicle, opening externally, from which canals, containing long vibratile cilia, pass into the body. In certain Distomata, such as *Aspidogaster constricta*, there is a system of vessels of essentially similar character; but the principal canals—those lateral trunks which come off directly from the contractile vesicle—present regular rhythmical contractions. The smaller branches are all richly ciliated. In other Distomata the lateral trunks appear to be converted into excretory organs, as they are full of minute granules; they remain eminently contractile; but their connexion with the system of smaller ramified vessels ceases to be easy of demonstration. As Van Beneden and others have shown, they still form one system; but the cilia are no longer to be found in the smaller ramified vessels, having sometimes vanished altogether; at others, being discoverable only here and there in the minute ultimate terminations of these vessels. In certain Nematodea the vascular system is reduced to a couple of lateral contractile vessels, altogether devoid of cilia, but communicating, by a small aperture, with the exterior. Now, there is no doubt that, in all these cases, the "vascular system" is physiologically a respiratory system; while the common cavity of the body represents the blood-vascular system of the Mollusca and Articulata. However, Echinorhynchus possesses a vascular system of the same nature as that of a Nematode or Distomatous worm, but presenting no cilia, and having no external opening, thus forming a closed vascular system, homologous with those previously described, and differing from them only in the fact of its closure. But from hence it is a very easy and natural transition to the vascular system of the Annelida,—and the author stated his conviction, based not only upon these, but upon many additional reasons, that these so-called blood vessels and those of the Echinodermata, form, in fact, only the final term of a series, of which the so-called water vascular-system of the Rotifera constitutes the commencement. If, however, these vessels have really nothing to do with the proper blood vascular system of the higher Annulosa, with what system of organs are they homologous? In answer to this question, the author stated his belief, that they correspond with the tracheæ of Insecta, which present a similar extensive ramified distribution, and, in some cases, as in the larvæ of

the Libellulide, constitute as completely closed a system of vessels.

The reading of this paper led to a discussion, in which Dr. CARPENTER and Prof. OWEN took part.

'On the Nature of the Torbanehill and other Varieties of Coal,' by Dr. REDFERN.—He introduced the subject by remarking that the great interest which it has recently excited owes its origin to the practical question raised in the jury trial, *Gillespie v. Russel*, rather than to investigations into the characters of coal pursued for their own sake. He stated his conviction that the term "coal" as at present applied in ordinary life is sufficiently understood for all commercial purposes, for the making of lenses, &c., and that differences of opinion as to the scientific definition of coal ought not to interfere with the popular acceptance of that term. The author then pointed out that the geological position of the Torbanehill coal is like that of all others; and he produced Dr. Fyfe's tables of the chemical composition of coals to prove that the Torbanehill coal has in it all the chemical ingredients of coals, and in nearly the same proportions as in some of them, and that it does not contain anything which is not found in coals. He produced specimens to show that the Torbanehill coal is laminated, and that it is full of fossil plants visible to the naked eye. On fractured surfaces he showed numerous angular facets variously inclined, and stated that these as well as large portions of the surfaces of the larger fossils may often be seen to be produced by vessels of plants on the use of a pocket lens. As these fossils have a similar microscopical structure to the whole mass of the coal, and this contains 65½ per cent. of carbon, he urged that these facts are in themselves almost conclusive evidence that the seam is a mass of vegetable matter. Small cubical blocks of Torbanehill and other coals show above and below small rounded yellow spots set in a dark mass, but on their four sides these spots are elongated in the direction of the laminae. There are no such appearances as those presented by a block of wood in any coal whatever; whilst those presented by the Torbanehill coal are exactly the same in kind as those of other coals, though differing in degree. Microscopical sections taken horizontally and vertically always differ in the same manner as the surfaces of cubical blocks. All vertical sections are alike in the Torbanehill and other coals;—all horizontal sections are alike, but widely different in all these coals from vertical sections. The striated appearance of vertical sections is therefore not due to coal being fibrous like wood, but to its laminae, which a vertical section cuts across as one would cut through the leaves of a book. The author denied *in toto* the correctness of two important statements made in a paper recently published by the Microscopical Society of London, and affirmed in opposition to these that horizontal and vertical sections of the Torbanehill coal are never alike, but differ like those of other coals; also, that coal and wood differ as widely as a laminar and a fibrous structure. He proceeded to give a lengthened and systematic description of the various microscopical appearances of coal, illustrating these by coloured drawings and sun-pictures. He pointed out that the Torbanehill and other coals are in great part made up of rounded flattened yellow masses separated by dark matter made up chiefly of vegetable tissues in a fragmentary state. There are also several other bodies, such as spores, &c., shown on microscopical examination; but it is important to bear in mind that whatever be the interpretation of the microscopical appearances in the Torbanehill coal, there is not a single character presented by it which is not found in other coals. The author concludes from his investigations that coal, Cannel coal especially, is the result of maceration, disintegration, and chemical changes taking place in a mass of vegetable matter, the nearest approach to which at present is that presented by a very fluid peat-bog. He believes that in geological position, chemical and histological characters, the Torbanehill coal is like other Cannel coals; and that it differs from them in being more valuable for the production of gas, and consequently less valuable for the formation of coke.

Mr. C. BROOKE was inclined to limit the definition of coal so as to exclude substances such as the Torbanehill mineral. He thought in all cases of true coal, the pitted, or scalariform tissue, could be detected, which was not the case here. The coke produced from the Torbanehill mineral was very different from the coke of common coal.—Mr. JUKES stated, that looking at this question from a geological point of view, the Torbanehill product must be regarded as coal. It had been deposited in the same way, and derived from the same sources as coal, and it was quite impossible to divide them.—Mr. MORRIS wished to give the results of his experience of this substance as a practical man. He had bought it as coal in the market,—he had employed it as coal in his factory,—and he saw no difference between this and other coals, except that it was better than most which came into the market.—Dr. DICKIE regretted the want of a definition for so well-known a substance as coal. The discussion, as it had been carried on away from this Section, had rather been about the nature of the word than the nature of the thing. He believed that Dr. Redfern had most carefully investigated the whole matter.—Mr. BOWERBANK regarded the substance in question as a coal shale, and not as a coal. All substances that burnt were not coals; and this differed very much from the ordinary specimens of coal.

'On the Great Anthropoid Ape, the *Troglydites Gorilla*,' by Prof. OWEN.—In this paper Prof. Owen went more minutely into the anatomy of the creature than he could have done in his lecture in the evening.—[ante, p. 1173].

Mr. PATTERSON exhibited specimens of *Priapulus caudatus*, procured while digging for bait on the mud-bank at Holywood, County Down. As other specimens had been obtained under precisely similar circumstances, Mr. Patterson thought it probable that this species was less rare in certain localities than had been previously supposed.—Prof. HUXLEY undertook the anatomical investigation of the specimens.

#### SECTION E.—GEOGRAPHY AND ETHNOLOGY.

When the Section met, Mr. A. G. FINDLAY presented a paper on 'Arctic and Antarctic Currents, and their Connexion with the Fate of Sir John Franklin.'—Allusion was made to a former paper, read to the Association at Hull last year, describing the currents of the Atlantic and Pacific Oceans, in the latter of which it was thought some new features were described. It was shown that a great similarity existed in the movements of the two oceans,—a system of westerly drifts between the tropics, which on arriving at the western side of each ocean turned north and south from the equator on each side of it, and re-curling when beyond lat. 30° N. and S., they passed to eastward, and re-entering their course on the eastern sides, they formed a complete circulatory system. In the present paper it was shown how the Polar regions were connected with these movements, and how tropical warmth reached the poles, and the cooling effects of the extreme climates were brought into more temperate zones. The nature of the enormous magnitude of the antarctic ices, which offer a perfect contrast to those of the North Pole, was explained. From the southern part of the southern connecting current, which encircles the southern part of the globe between lat. 40° and 50° S., a system of S.E. drifts is found, impelled by the prevailing N.W. winds. These drifts, as found by Capt. Sir J. Ross, Durville, Wilkes, Ballery, and others, run at a rate between ten and twenty-five miles per day towards the vast icy barrier whose limits, as far as known, was explained. This enormous collection around the South Pole is purely the result of atmospheric deposition, and is remarkable as lying to the south of the greatest area of ocean water on the earth's surface, and over which the winds pass towards it; but from the fact of all countries in south latitude having arid climates, and those in the north the reverse, this was another evidence that the evaporation of the northern hemisphere is deposited in the south, and *vice versa*. One fact analogous to those observed in the North Atlantic Ocean,—of dust, once supposed

to be volcanic, but proved to be microscopic Crustacea,—was cited as occurring near to the antarctic circle, and also adding a confirmation of the theory of the atmospheric circulation. The face of the icy barrier, consisting of cliffs elevated from 150 to 210 feet above the sea level, perfectly wall-faced, and extending continuously for hundreds of miles, was an evidence that ocean currents did not penetrate that circle, which we only know from its external edge. These table-topped barriers were the result of surface deposition, and, being above 1,000 feet thick, were of sufficient solidity to be protruded bodily downwards from the interior lands, which might consist of mountains of solid ice of sufficient inclination seawards to allow the set of the stratified upper portions to glide downwards, bearing on their under surfaces immense quantities of earth and detached rocks. The floating ice met with in such large quantities is the result of the breaking up of the detached table-topped bags, and from the face of the cliffs, and not on the surface of the sea, which maintained a comparatively high temperature. This high temperature was brought by the S.E. current previously alluded to as setting from the southern portions of the south connecting current, and the rates and duration of which were inferred from the examples cited at from ten to twenty-five miles per day. Arriving at the face of the icy barrier this current was lost, close under it there being but little movement felt; what there was being a drift to the westward,—a circumstance similar to what has been related north of Siberia. On the surface, then, no outlet is appreciable for the waters, but the drifting of the immense tabular bergs, immersed 800 feet, and rising 200 feet out of the water, was a proof of a northern or rather a north-easterly set, which by different observations was considered to move from twelve to eighteen miles per day when free from the barrier. The zone of equal temperature of the ocean, or 39°·5, was observed by Capt. Sir James Ross to encircle the South Pole in a mean latitude of 56° 26' S. On this circle the temperature was the same from the surface to the bottom, and was connected with these surface and subsurface currents moving in opposing directions. The icebergs and drift ice being thus transported into more temperate climates disappear, and the north-east drift adds its share to the eastward currents, which strike the western shores of Patagonia, and then turning northward form the Peruvian current, and against the west coast of Africa forming the cool South African current. In this manner the frigid influences of the antarctic climate were attempered, and brought into connexion with the other portions of the great world of waters, and illustrated that mighty system of ocean circulation everywhere evident in its effects on climate and the subject of meteorology in general. In the North Polar Sea a very different order of things exists: in many points a perfect contrast to those just described; but, as the subject was more familiar, it was not so largely entered into, the chief features only being selected. The fact of the Arctic Basin not being a sea of perpetual ice (or one solid mass of ice) was an evidence that it was pervious to the influences of more temperate climates; and that there being no old ice was a proof that means were at work for renewing it and dissipating the surplus of what the short summer does not dissolve. The current through Behring Strait,—an offset of that which the author first described, in 1851, as the Japanese current, similar in the Pacific to the Gulf Stream in the Atlantic,—was shown to be an unimportant northerly set through the narrow strait, and, therefore, was quite inadequate to produce any marked effect on the polar ices. The main body of warm water passed between Greenland, or rather Iceland, and Norway, and was an offset to the north-east of a portion of the Gulf Stream. The mode of this drift was explained by a diagram of the winds in lat. 47½° north, long. 32½° west, derived from Commander Maury's observations, but which showed some imperfections in the recording or arrangement. In this the great prevalence of the south-west over the north-east winds was clearly seen; and to this was owing the drift, which renders England and Iceland habitable, and enters the



Arctic Basin, as has been described. The course of this stream was then traced step by step, eastward, till it emerged into Baffin's Bay or north of Greenland, between it and Spitzbergen, whence, passing southwards, it joined the southerly set down Baffin's Bay, across the banks of Newfoundland, transporting the deeply-immersed bergs into the warm waters of the superficial Gulf Stream, and then, turning to the south-west, between the Gulf Stream and the coast, it was lost at Cape Hatteras. In the north, then, as well as in the south, the circulatory system is apparent, and then each portion of the waters of the ocean visits, by turns, every portion of the earth. The fate of Sir John Franklin was next brought forward as a collateral subject. Mr. Findlay held that the statement, that two deserted and dismantled ships, seen on the ice on the north edge of the Newfoundland Banks on April 20, 1851, was quite possible, and that if true, of which he had no doubt, they were the unfortunate Erebus and Terror. The perfect consistency of the story as related by the different parties, and the improbability of any whaling ships remaining perfect for many years, led to the conclusion that they could be no other. Similar instances, as related by Dr. Scoresby, the parent of Arctic meteorology, of the drift of Sir James Ross, and of the Grinnell Expedition, might all be taken as evidences of the possibility of the statement. It was, therefore, believed that Franklin's track might be followed up the Wellington Channel from 1846 for one or two seasons; that, proceeding to the west or north-west, perhaps for 500 miles each step, he either got fixed in the main pack or else in some inclosed bay, like that of Capt. McClure as at present, and then deserting his ships, had not been able to reach any point where rescue was at hand; and that the ships, obeying the universal law, that all floating bodies within the Polar Basin must come out, drifted by the ocean currents either through Smith's Sound, found clear by Capt. Inglefield in the succeeding spring, or round Greenland, and down between it and Iceland, reached, without any great chances of demolition, the spot where they were stated to have been seen. There is no difficulty in allowing all this, and in finding perfectly analogous cases; but the main point, the ultimate end of the unfortunate Expedition, it was thought, would ever remain shrouded in the most painful mystery, as the search had only just begun in the right direction, and the last ray of hope would be extinguished if the present Expeditions return without bringing any intelligence.

The paper was illustrated by several large and effective diagrams, and drew some laudatory remarks from the PRESIDENT, who called for the opinions of the Rev. Dr. SCORESBY, who coincided in the views of the author as to the currents.—Rear-Admiral BECCHY also spoke in confirmation of what had been said, and Sir JOHN ROSS spoke also on the subject, and, at great length, on Arctic matters.—Dr. SCORESBY gave some interesting details connected with Arctic life, stating his opinion that there were islands, further in from Melville Island, upon which the crews of the Erebus and Terror could have obtained sustenance. He also showed distinctly that the atmosphere was heated when the wind blew from the south, and concluded by observing that no navigator had yet sailed further north than 80° or 80½°.—The PRESIDENT asked if it were not the speaker's opinion that Sir John Franklin might have taken refuge on an island in the longitude of Wellington Straits as far north as Spitzbergen, and which was as yet undiscovered, and whether they might not there be enabled to get provisions!—Dr. SCORESBY replied in the affirmative.

‘On Glaciers in the Arctic Regions,’ by Dr. SUTHERLAND.

The PRESIDENT expressed a hope that the Committee would fit out an Expedition. It would have an important and most useful bearing upon geology and physical geography. The cost, as estimated by Dr. Sutherland, would be about 3500.

‘On some Remains of an Early People in the South-eastern Corner of Yorkshire,’ by Mr. T. WRIGHT.—This was founded on the discovery of a number of flints in ploughed land, which were

in the shape of arrow-heads, fish-hooks, &c.,—and it was imagined that these flints had been chiselled into the shapes above mentioned, by an extinct race called the Parisii, for the purposes of the chase. They were found near Flamborough.

A discussion arose, in which Mr. SAULL, Dr. LATHAM, and others joined, in which it was stated that similar articles had been found all over the world. Mr. Saull contended that they belonged to the Celtic race.

#### SECTION F.—STATISTICS.

‘On the Laws of the Currency as exemplified in the Circulation of Country Bank Notes in England since the passing of the Act of 1844,’ by Mr. J. W. GILBART.—In commencing his task Mr. Gilbert described the origin of country bank-notes, which were first denominated Goldsmiths' notes, and were issued by the body whose name they bore. They were first circulated in 1645; they were made a legal tender in 1704, and, in 1709, were made assignable as inland bills of exchange. In 1729, their forgery was made a felony; and in 1804 they, like all other notes, were made subject to the stamp duty. With respect to Lancashire, it appeared never to have had any country note circulation; and this circumstance he accounted for by the fact that, in this county the circulation consisted mainly of bills of exchange, which passed from hand to hand like bank-notes, having the indorsement of all the parties through whose hands they passed. In Liverpool large notes were required to pay duties at the Custom-house, and as the transactions between manufacturers and dealers were settled by bills of exchange, and as these bills were all made payable in London, bank-notes were not required in Manchester and Liverpool even for the payment of these bills. With respect to the Bank Act of 1844 the paper stated that the objections urged against the Bank circulation was that it was unsafe, excessive, and ill regulated; but the measure only dealt with the second objection. The paper proceeded to show the unfair method of taking the averages fixing the circulation, and the inevitable result to lessen the amount of the circulation of the country banks, which it had done to the extent of 700,000*l*. The fluctuations of the circulation were then considered as regards country banks and the causes which seem to influence them, showing that the tendency of the methods of business now adopted was to cause less circulation of notes in proportion to transactions, and also to increase the amount of deposits in banks arising from the facilities of using them. The number of banks and their circulation, relative and positive, were next discussed, as also the tendency and probable result of the law of 1844. The reasons which had made the banks of Liverpool non-issuing banks were explained. The radius of 65 miles, within which no joint-stock bank exists, was compared with the outer circle of the whole, and comparative results shown with great clearness and conciseness. The paper closed with a consideration of amendments in the Act of 1844, which Mr. Gilbert suggests in anticipation of an inquiry into its operation which will next year be entered upon by the legislature, and in connexion with this, the question of a 1*l*. note circulation was considered. The views of Mr. Gilbert on both questions will be found in the following extracts:—“It is not the object of this paper to examine any of the enactments of the Act of 1844 that have a reference to the Bank of England. But when the subject is brought under consideration, means should be employed to obtain some modification of those clauses that have a reference to the country banks. The country circulation should be preserved in its integrity; should be rendered capable of expansion, so as to meet the demands of a more numerous population, higher prices, and increased taxation—its issue should be regulated by the demands of trade and agriculture in the respective districts in which the banks are established, and should be rendered as much as possible free from the operation of the foreign exchanges. In endeavouring to remove these inconveniences, we should be governed by a regard to the spirit of the Act of 1844, and attempt only to correct its practical evils. Among the modifi-

cations that may be suggested, perhaps the following may deserve a special consideration:—That all the banks who had formed agreements with the Bank of England, and whose compensation will cease in 1856, should then be allowed to circulate their own notes to the amount to which they had circulated Bank of England notes;—that the country circulation should not be less than the amount fixed by the Act of 1844, and that the deficiency of 706,387*l*., which has since taken place, should be redistributed among the country banks, (whether at present issuing or non-issuing,) in the districts in which the deficiency had taken place;—that we adopt the enactments of Scotland and Ireland, by allowing the existing banks of issue to extend their issues beyond their fixed amount, provided they have gold, either at the head office or at any of the branches, equal to the amount of the excess; and as Bank of England notes are a legal tender in England, and can be converted into gold upon demand, they might in this instance be placed upon an equality with gold;—that banks of issue not having more than six partners, be permitted to continue their fixed issue in the same locality, even should they increase their partners to a greater number than six; and that this regulation be made retrospective, so as to include all unions of banks of issue with other banks that have taken place since the year 1844; and further, that we adopt the law of Scotland and Ireland by allowing two or more banks of issue, whatever may be the number of their partners, to unite and to retain the united amount of issue of all the united banks.” With reference to the issue of notes under 5*l*., he thinks that is a question for the consideration of statesmen, and its adoption must depend upon the political circumstances of the country. As long as Australia can supply us with gold sufficient to meet our foreign requirements, and to maintain our domestic currency, probably we had better remain as we are. At the same time it may be useful to know, that, in case of necessity, we have a magazine from which we may draw a large supply of the sinews of war.

The paper was followed by an animated and interesting discussion, in which Mr. DANSON, Mr. BROWN, and other gentlemen took part.

‘Statistics of Nice Maritime,’ by Lieut.-Col. SYKES.—The paper, which was a very interesting one, was illustrative of the moral, sanitary, and general social condition of Nice. A short discussion ensued on its being read.

Mr. NEWMARCH then delivered a long and able address on the following subject, illustrated by large diagrams and figures on the wall:—‘Facts and Statements connected with the question, Whether, in consequence of the Discoveries within the last Six Years, the Exchangeable Value of Gold in this Country has fallen below its former Level?’—After showing the immense increase in the metallic currency which the recent discoveries had caused, he gave it as his decided opinion that those discoveries had not had the effect of causing the exchangeable value of gold to fall below its former level, except indirectly, and that, in this respect, the commerce and general trade of the country had derived great benefits, and the social condition of the community had been materially improved.

The statement was followed by a discussion, in which Mr. MONCKTON MILNES, Mr. W. BROWN, Mr. DANSON, and Mr. J. ROSSON took part. The various speakers dwelt upon the great value of Mr. Newmarch's statements.

#### SATURDAY.

‘The Progress and Direction of British Exports, and the Influence thereon of Free Trade and Gold,’ by Mr. R. VALPY.—Referring to the several statistical abstracts recently published for the first time by the Government, the author sketches the increase of the exports of home produce from this country from 1840 to 1853, showing that their total value was 877,299,000*l*.; that they rose from 51,406,000*l*. in 1840 to 98,933,000*l*. in 1853, or nearly 93 per cent. Those to foreign countries rose from 34,431,000*l*. to 57,950,000*l*. in the same period; and those to British possessions abroad from 16,974,000*l*. to 22,756,000*l*. Further, in 1840, the proportion sent to European countries was 57 per cent., and in 1853 only 42 per cent. of

the whole; while North America, which took 20 per cent. of the whole in 1840, took in 1853 no less than 33 per cent. To the United States alone our exports were, on an average of the years 1842-45, only 23,623,000*l.*; and in the years 1850-53 no less than 69,481,000*l.* The general conclusions suggested by the author may be stated as follows: That the average increase during the period has been larger to foreign countries than to British possessions. That our exports have averaged the proportions of about two-thirds to foreign countries, and one-third to the British possessions. That, with foreign countries in different parts of the world, the order of increase has been to North America, South America and Europe, and of Northern, Central and Southern Europe; the rate of increase being highest in the southern division. That with the British possessions the order of increase may be arranged to Australia, Cape of Good Hope, North American colonies, and the East Indies; and, finally, that to the United States and the other corn-growing countries, excepting only Russia, our exports have increased with our imports of corn. One fact noticed by the author seems extremely remarkable, namely, that for twenty years and upwards after the war which terminated in 1815, the declared value of our exports did not increase, but continued very much the same year after year, and those values were much less than they had been for fourteen years up to the termination of the war.

A very lengthened discussion followed the reading of the paper. — Mr. BROWN said he could assure them that the Emperor of the French was as good a free trader as any of them. The hon. gentleman stated, that a society had been formed, under the auspices of the Emperor, to build docks and warehouses, and that the Emperor had requested the co-operation of some London merchants with one from Manchester and himself (Mr. Brown), for the regulation of them when built. Mr. Brown stated that the contractors were Messrs. Fox & Henderson, and he added that he was not able to aid in the arrangements. It was gratifying to know that our removal of restrictions, without waiting for others, had produced such good effects,—those which were anticipated, as was instanced in this movement in France; and, moreover, in the news received that morning, in which it appeared that the King of Sweden had opened the coasting trade of that country. Mr. Brown instanced the progress of Liverpool and the projected docks as proof of the advantage of free trade.

‘On the Effects of Good and Bad Times upon the Commitments to Prison,’ by the Rev. W. CLAY. —The Rev. gentleman is chaplain to the Lancaster prison, at Preston, which position he has held since 1826, and of course he has had an opportunity beyond most other men of becoming acquainted with the question to which he has addressed himself. His paper was founded upon a general arrangement of the Reports, which in his capacity of chaplain, he has from year to year addressed to the magistrates of the county, and it was most elaborate, consecutive, and precise. The Rev. gentleman divided the whole period into times when labour was abundant and well paid, and when it was scarce and low priced. He compared the numbers of commitments, both summary and for trial in those periods, and from these it appeared as a law, that commitments increased in times when labour was abundant and well paid, and were less when it was scarce and unabundant.

A discussion then ensued, which was opened by Mr. M. D. HILL, the Recorder of Birmingham, who fully corroborated from his own experience the conclusions of the Rev. Mr. Clay.—Lord HARROWBY also took part in the discussion. His Lordship dwelt upon the necessity of affording the people habits of cultivation and training in youth, otherwise they would not know how to apply their money or leisure. He advocated the establishment of halls and libraries, and recommended lectures and other means of instruction and amusement. He urged that mechanics’ institutes should afford the people information on religion and politics, and they would then become the advantageous places they were intended to be.

—Alderman NEILD spoke of the circumstances of his establishment in Manchester, where they had prepared a room and supplied a library for the work-people.—The Rev. Mr. CLAY stated that one employer in Preston had supplied his hands with advantages of that kind, and he had heard him say he could not afford to part with his hands for others for 8,000*l.*—Mr. TINNE and Mr. BROWN expressed the appreciation of the magistrates for the Rev. Mr. Clay; and the ARCHBISHOP OF DUBLIN also addressed the Section.

A paper was read, entitled ‘Statistics of Poor Relief and Movement of Population in the Hundred of Wirral, Cheshire,’ by Sir P. BOILEAU.

‘On the Deaf and Dumb in the United Kingdom in 1851,’ by Mr. D. BUXTON.

#### MISCELLANEA

*Book-Post to the Ionian Islands.*—Under an arrangement concluded by the Government of the Ionian Islands with Austrian Lloyd’s, for the conveyance of books by the vessels of that company between Malta and Corfu, the colonial book-post, extended to the Ionian Islands in June, 1851, but suspended in September, 1853, owing to the withdrawal of her Majesty’s packet, which had previously conveyed the Ionian Mails, will be re-established. Printed books, magazines, reviews, and pamphlets, may in future be forwarded to the Ionian Islands, *via* Southampton and Malta, at the following rates of postage, *viz.*—For each packet not exceeding half-a-pound in weight, 6*d.*; exceeding half-a-pound, and not exceeding one pound, 1*s.*; exceeding one pound, and not exceeding two pounds, 2*s.*; exceeding two pounds, and not exceeding three pounds, 3*s.*; and so on, increasing 1*s.* for every additional pound or fraction of a pound. Provided, however, that the following conditions be observed:—1*st.* Every such packet must be sent without a cover, or in a cover open at the ends or sides. 2*nd.* It must contain a single volume only (whether printed book, magazine, review, or pamphlet), the several sheets or parts thereof, where there are more than one, being bound or sewed together. 3*rd.* It must not exceed two feet in length, breadth, width, or depth. 4*th.* It must have no writing or marks upon the cover, or its contents, except the name and address of the person to whom it may be sent. 5*th.* The postage must be prepaid in full, by affixing outside the packet, or its cover, the proper number of stamps. If any of the above conditions be violated, the packet must be charged as a letter, and treated as such in all respects. To prevent any obstacles to the regular transmission of letters, any officer of the Post-office may delay the transmission of any such packet for a time not exceeding twenty-four hours from the time at which the same would otherwise have been forwarded by him.

*Number of the Blind.*—In Great Britain and the Islands of the British Seas there are 21,487 persons—11,273 males and 10,214 females—returned as totally blind. The number in England and Wales is 18,306 of both sexes; in Scotland, 3,010; and in the Islands of the British Seas, 171 persons. These numbers furnish a proportion relatively to the whole population of 1 blind in every 975 persons in Great Britain, 1 in every 979 in England and Wales, 1 in 960 in Scotland, and 1 in 837 in the Channel Islands and the Isle of Man. These results admit of favourable comparison with the relative numbers in Ireland, which, according to the Census, are one in every 864 inhabitants. In the level portions of Europe, comprising Belgium, Hanover, parts of Germany, and the plains of Lombardy and Denmark, the proportion is stated to be 1 blind in every 950 inhabitants—but slightly differing from the average of Great Britain. In more elevated regions the proportion is considerably lower; but in Norway it is found to be 1 in every 482 inhabitants.—*Census Report.*

TO CORRESPONDENTS.—H. P.—H. O’B.—W. S.—G. R.—P. L.—J. B. Y.—G. W.—J. A. F.—J. C.—W. P.—J. B.—W. S. (Australia).

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MAJOR THE HON. HENRY LITTLETON POWYS,  
60th Royal Rifles.

## Assistant Secretary,

FREDERICK HAYLEY BELL, Esq.

The following REPORT was unanimously passed, at a General Committee Meeting, on the 23rd of October, 1854,—the Right Hon. the EARL OF EPPINGHAM in the Chair.

## First Half-Yearly Report of the Central Association.

This Association originated at the National Club on the 24th of February, 1854, and was joined on the 23rd February by a Deputation from the Army and Navy Club. It was formally instituted at a public meeting held in Willis's Rooms on the 7th March, 1854, (the late deeply-

lamented General Sir Peregrine Maitland, G.C.B. in the chair,) and has now completed the first half-year of its operations.

The vast amount of undeserved misery that this Association has been the means of alleviating during the past six months, induces the Committee to make a half-yearly Report of their proceedings; and this, not only to show that the noble effort made by the country on behalf of the silent sufferers has not been a fruitless one; but also to direct public attention to the urgent and absolute necessity for the establishment of some permanent National Provision for the Wives and Families, Widows and Orphans, of our soldiers.

Notwithstanding all that has been said and written on the subject, the fact still remains in all its sadness, that for the wife and family, widow and orphan, of our best-behaved soldiers, whether non-commissioned officer or private, no provision whatever is made. Nothing but private charity keeps them from pauperism when their husbands and fathers are taken away.

The marriage of these good men is fully permitted by military authority: it is even granted as a reward for good conduct, and yet should they be ordered to the seat of war, or die in the service of their country, their families are cast aside in utter destitution and desolation.

To prove that this is no over-statement, the Committee have selected a few cases out of hundreds, all of which are those of wives of non-commissioned officers and privates, who, having been married with military sanction and approval, had been placed on the strength of the regiment.

Case 490, Mrs. B.—Wife of a sergeant of the 38th. Married with leave. Left destitute with 6 children after she had spent the small sum her husband left for her. Five of her children provided for; the sixth being an infant, and the mother being weakly, she received a weekly allowance of 5s. until she obtained work as a washerwoman, for which the Association furnished the means, and she now earns her own livelihood, assisted by her two boys, aged 12 and 13, for whom situations as pages have been found.

Mrs. E. F., 8th Hussars.—A most respectable person, married with leave, in delicate health. Left destitute with 6 children. Earns a little by washing, for which a donation of 2s. was granted. A weekly allowance of 7s.

Case 439, Mrs. W. H. R.—Wife of a private, 13th Light Dragoons. Married with leave. Left destitute with 4 children. A most respectable person. A situation as cook obtained for her, and all her children provided for.

Case 73, Mrs. S. J. G.—Wife of a sergeant in the 21st Regt. Married with leave. Left destitute with 4 children, and expecting her confinement. A weekly allowance of 5s. in addition to the parish out-door relief of 5s. a week and four loaves.

Case 460, Mrs. W.—Wife of a lance-sergeant in the 6th Dragoons. Married with leave. Left destitute with 3 children, and expecting her confinement. A weekly allowance till she became a widow, when she was granted 80s., and one of her three children provided for by the Birmingham Local Committee.

Case 193, Mrs. E. H.—Wife of a private in the 38th Regt. Married with leave. Left destitute with 4 children. One child provided for, and a weekly allowance of 7s. a week.

Case 384, Mrs. A. F.—Wife of a private in the 77th Regt. Married with leave. Left destitute with 5 children. A weekly allowance of 10s.

Case 433, 38th Regt.—Mrs. A., the wife of a sergeant. Married with leave. Left destitute with 4 children. Has been provided with a situation at 14s. a year, and all her children taken care of by the Association.

Mrs. E. F. 63rd Regt.—Married with leave. Sixteen years wife of a private. Left destitute with 5 children. A weekly allowance of 7s.

Mrs. E. T. 46th Regt.—Married with leave. Left destitute with 5 children under 10 years of age, unable to leave her infant, a weekly allowance of 7s.

Mrs. T. L. 28th Regt.—Married with leave. Wife of a sergeant. Left with 5 children. Her husband left her some little money and his watch, to part with in case of need. The watch had been parted with, when this Association helped her out of all her troubles, and she regularly receives money from her husband.

Case 321, Mrs. E. B.—Wife of a private, 88th Regt. Married with leave. Left perfectly destitute with 5 children. The two youngest (twins) born since her husband left. In very bad health since her confinement. A weekly allowance of 12s.

Cases Nos. 406, 407, 408.—The wives of privates of the 55th. All married with leave. Left destitute with 10 children. A weekly allowance to each.

Case No. 963, Mrs. C. B.—Wife of a private, Royal Artillery. Married with leave. Left destitute with 6 children, in great distress. A weekly allowance granted.

Case 971, Mrs. A. C.—Wife of a sergeant of the 38th Regt. Married with leave. Left destitute with 6 children. A weekly allowance of 12s.

Case 592, Mrs. T.—Wife of a sergeant of the 11th Hussars. Married with leave. Left with 6 children. Eldest daughter provided with a situation, and a weekly allowance of 10s. to her mother.

This dreary catalogue of destitution might be continued almost to an endless extent, and all the harrowing details accompanying each case might be given; but the Committee are satisfied that a simple statement of these facts is more than sufficient to prove the need for, and the reality of their work. It is true that the parish of the soldier may be compelled to support his wife and family; but the Committee would ask whether the workhouse is a fitting place for the families of men who can write such letters as the following?

"Camp near Yarna, August 30th, 1854.  
"Sir,—I sincerely trust that I may not offend you by the liberty I take in addressing you; but having heard of your kindness to the wives and children of soldiers now serving in Turkey, I am induced to request your kind assistance on behalf of my little daughter. By the last mail from England I received the melancholy intelligence of my wife's death, which occurred on the 9th of August, leaving my little girl entirely unprovided for, &c. I therefore humbly hope that you will kindly cause inquiries to be made, so that my child may not be left entirely unprotected or uncared for. I will most gladly contribute, as far as my means will admit, to defray any expense which may arise in placing her in any establishment which you select. We expect to embark for Sebastopol to-morrow. Consequently I feel very anxious that some steps may be immediately taken to provide for her. I remain, Sir,  
"Most respectfully,  
"G. H., Sergeant."

"To Major the Hon. H. L. Powys,  
"60th Reg. Rifles, Hon. Sec."

The wife and child of this non-commissioned officer were entirely supported by the Association until his wife died of cholera in London. His daughter is now comfortably settled at the Industrial School at Birmingham, at the expense of the Association; and when thoroughly trained and educated, will be provided with a situation by the managers of the Industrial School.

"Devno, in Turkey, July, 1854.

"My dearest Mary,—I know you will be glad to have this letter from your dear father. I hope and pray, Almighty God, that you and your dear little sisters are quite well and happy and comfortable. Give dear Fanny and dear little Margaret my very best and fondest love, with many kisses also to your little companions. I have not been yet where the 38th Regiment is. When I see the Regiment, I will be sure to go and see their fathers. I hope you are well and happy altogether, and love each other, and be kind to one another. But, my dear child, you must look after and see to your youngest sister, for she is but a baby yet, and may God bless you all and keep you under His Almighty wings, always is the daily prayer of your loving father. He kind to your dear sister Fanny, kiss her for me, tell her I send my very best love to her, and she is to learn all she can till I come home, which I trust, please God, won't be long. I hope you are all good children, and do what you can to assist Mrs. B., who will, I know, be very kind and good to you. I hope she is quite well. Give her my best respects. I hope you love and obey your teachers. You must write to me, my dear Mary, &c. &c. We are all in a very large camp. I dare say 10,000 men. We all sleep on the ground. We have our cloaks and one blanket to cover us. There are no houses near us for miles. We all went to a little valley yesterday, and heard Divine Service, and very many of us received the Sacrament of our Lord Jesus Christ afterwards. Oh! my dear child, never forget your prayers, and be a good child, and you will have God for your father and brother for ever. Pray for your dear sister; pray for your father, and God will hear you. He will bless and keep us always, and bring us to Heaven at last for Jesus Christ's sake. And now, my darlings, good bye, and may God bless and take care of you all is the prayer of your loving father.  
"T. D."

Letter addressed to the Honorary Secretary of the Dublin Association:—

"September 2nd, 1854.

"Sir,—Only for the relief I received weekly from you, I would have been obliged to go into the workhouse, with my two children, which would have been worse than death to me; for if we were dead, our miserable existence would be ended here. I could not have maintained myself and children only for it, though I worked day and night to do so, and tried every means in my power, yet I found it was impossible. I was making shirts for Gilpin, in Molesworth-street, at 5s. per dozen, and I could not complete the dozen in a week; so if I had not had that relief, what should I have done? I never received any money from my husband since I left him, nor had no one to ask me or my children to have a meal of victuals since I lost my only friend—my dear husband. And now, through your kindness and interest, I have got a situation; and if you did not still allow me a little to pay for my children, I should not be able to remain in it, as I have not enough wages to pay for them and clothe myself and them.  
"I hope God will reward every one who has so kindly helped the poor soldier's wife and child; for most of us have been thrown out of a comfortable home, to face a frowning world. I hope the Lord will reward you also, Sir, for the kind interest you have taken in the soldiers' wives, &c. &c.  
"Mrs. J."

Many more letters might be quoted, showing how grateful these fine fellows are for the care that has been extended to their wives and children; but quite enough, it is hoped, has been stated to satisfy the Committee that they not only are doing what is right, but that it is the bounden duty of England to carry out the work that has been thus happily commenced.

Nor are the poor women themselves ungrateful for all that has been, and is doing for them. With a few exceptions, all have evinced the greatest thankfulness, and readiness to find employment for themselves. Two wives of soldiers who had been temporarily relieved with weekly allowances, offered to repay the Association as soon as their husbands remitted money; and one of them, directly she received a remittance from her husband, insisted on repaying a sovereign to the Association, saying at the same time, "That reign to the Association, saying at the same time, "That there was many a poor soldier's wife who needed it more than she did." More than two hundred have been placed

in situations as housemaids, cooks, nurses, washerwomen, &c., and, generally, have given satisfaction; one of them writes thus to the Inspecting Officer:—

"Sir,—According to promise, I now let you know how I am getting on. I never was so happy in all my life. I have indeed a kind master and mistress; they look to my comfort in every way; I might well say, it is equal to my own home. I only wish to God that more of the women were so well provided for as I am, Sir. Will you return the Association thanks in my name, for their kindness to me and my child; also for the 10s. I have received, with which I have bought some clothes. I hope that I will keep my situation a long time. The lady seems to like me very well, and she says that anything in her power she will do to promote my comfort. With my sincere thanks to you for your kindness, "Your obedient servant, E. D."

Many women, natives of Nova Scotia and Canada, on being provided a passage by Government to their own country, have been granted a donation of 3l. each, to provide them with comforts for themselves and children during the voyage. To 17 women of different regiments, all married with leave, has the Association been thus beneficial.

On the 26th of June, information was received from the Portsmouth Local Committee, that 34 women and 72 children would be forwarded to London, on their way to their husbands' parishes, from Malta, from whence they had been ordered home, their regiments having gone on to Turkey. The Inspecting officer of the Association was immediately ordered to the Waterloo Station, where having with difficulty got them all together, took them to the Pay Office in Westminster, where they were to receive passage warrants for their different destinations. But they were unable to proceed till the next day; and thus would have been left utter strangers in the streets of Westminster, searching in vain for lodgings, which, with the small Government allowance granted for that purpose, they were unable to pay for. Respectable lodgings were found for them all, and their children; and the next day they were despatched to their destinations, with a small donation for travelling expenses. It is needless to add, that all these women were married with leave, and many of them most respectable wives of non-commissioned officers.

Upwards of THREE THOUSAND FIVE HUNDRED WOMEN, and SEVEN THOUSAND CHILDREN, have been kept from actual want during the last six months, the greater part of whom still remain claimants on the Association, especially those who have become widows and orphans. This has been done by the outlay during the past six months, of 9,172l., chiefly in weekly payments, both by the Central Committee and the 78 Local Committees.

Besides these 10,500 women and children, fresh applications are made almost daily to the office; thus showing that the number of women and children left behind is much greater than the public were led to suppose, by the Parliamentary Return called for in both Houses of Parliament. This, however, is accounted for, by showing the inaccuracy of the Parliamentary Return, as follows:—

63rd Regiment.	63rd Regiment.
Parliamentary Return.	Association Return.
No. of Women and Children, 170.	No. of Women and Children, 245.

The Association Return was received during the same month that the Parliamentary Return was given; and as it contained the name of every woman, and the number and ages of every child, and was signed by the Colonel commanding the regiment, it may be very fairly be considered to have been the most accurate one. If there be such a discrepancy in the returns of one regiment, what must there be in forty?

#### MARRIAGE WITHOUT LEAVE.

It is a curious fact that has been brought to light by the practical experience of this Association, that, without exception, those soldiers who have married with leave, or whose wives were admitted into barracks, and recognized by the regiment, have left the largest families, and, in consequence, are by far the most deserving of commiseration. To these persons the Association has been of the greatest benefit; while, at the same time, amongst those women married without leave, much misery has been found to exist, which the Association has not refrained from alleviating.

The Committee, however, regret to find, that notwithstanding all the positive and practical good that has been effected by the Association, there still remain in the minds of some military men strong objections to its operations; it is still urged that undue encouragement is given to marriage without leave, and that large numbers of soldiers have thus married since the institution of the Association. If the operation of the Association had afforded such encouragement, surely evidence of it would have appeared from a number of applications for relief on the part of women who had married in anticipation of it. ONLY ONE APPLICATION has been made at this office, by the wife of a soldier whose marriage certificate was dated in 1854; so that the objection would appear to be entirely groundless; and it might be considered almost needless to say more in answer to it. But the Committee have it to show, that while they have only contemplated those cases as entitled to relief which they found already sanctioned by Government, or acknowledged by commanding officers, they have made a Rule (No. 3), and have taken all the means in their power to give it publicity, which puts it out of their power to relieve any who may have married calculating on assistance from them; thus taking into consideration and providing against a contingency which might have arisen, but which has not occurred.

The following are the Rules with reference to this subject:—

1. No soldier's wife is entitled to relief whose name is not

entered in the regimental return, which though it contains the names of all women, whether married with or without leave, is yet signed by the Colonel commanding the regiment, and thus they are partially acknowledged.

2. The Government makes no difference between these women; and the passages of all are equally defrayed to the parishes of their husbands.

3. The rule for the relief of soldiers' wives married without leave, is only retrospective; for no soldier who has married without leave, since July 1854, will be entitled to relief for his wife.

On the 4th of July 1854, at the largest meeting ever held by the General Committee (General the Earl of Beauchamp in the chair), it was unanimously Resolved,—

"That from and after the date of this resolution, the 4th of July 1854, no wife or widow be entitled to a donation or pension who shall have married a soldier without leave, whether they belong to regiments on active service, or to regiments now under orders of readiness for active service, provided that such orders of readiness were received subsequently to the formation of this Association, on the 7th of March 1854."

As the Government, the officers commanding regiments, and the Association have found it absolutely necessary to countenance, to a certain extent, marriage without leave; and as it appears from the returns of the married men of the thirty regiments of the line, and the ten regiments of cavalry, that a large proportion of them in each regiment are married without leave, it becomes a serious question how far the trustees of the Association, in their own view of soldiers' has been successful in the prevention of matrimony. It is evident that, in spite of all the certain misery entailed upon them, soldiers will marry, and can find respectable women to marry them; it is also evident from the universal sympathy shown to their wives and families on the present occasion, that the country would gladly bierd them effectually; the Committee would, therefore, direct particular attention to the points at which the remedy of this Report, in hopes that some practical measure may be decided upon as speedily as possible, to prevent the recurrence of so much unmerited misery and destitution.

#### COLLECTIONS ON THE DAY OF HUMILIATION.

Thousands upon thousands of Her Majesty's loyal subjects joyfully followed her most gracious example on this day, and poured in of their abundance for the support of an Association which their beloved Queen and His Royal Highness Prince Albert had honoured with their joint patronage from its first commencement.

Had it not been for the noble contributions made on the Day of Humiliation, this Association would have been totally unable to grapple effectually with the dire distress and destitution brought to light by its operations.

All the great religious communities in the kingdom, except the Roman Catholic, unanimously joined on that day to help the soldier's wife and child.

To the Church of England especially, this Association is indebted for considerably more than two-thirds of the total amount collected. The Wesleyan Body also contributed largely and generously; the Jews too joined munificently in this national effort by having collections in their synagogues. The Committee remark with much pleasure that these astonishing collections were quite voluntary. No Queen's Letter was issued, and never was any public subscription so heartily assisted by the poor man's penny. In numberless congregational collections more than one pound's worth of halfpence was given. Even the prisoners in a large Government prison put their names down for a subscription of more than 29l. The total amount collected on that day would have been even greater had not many of the collections been made for the sailor's as well as the soldier's wife. Of these collections the Committee had the pleasure of paying over one-third to the Association for the Widows of Sailors and Marines.

The Committee would point out most emphatically that notwithstanding the remarkable exception in the *Fast Day Collections*, no religious distinction whatever is made in the distribution of this noble charity, the recipients are not even asked to what religion they belong.

#### OTHER COLLECTIONS.

At the head of these stands the County of York. The York Association (with its Grace the Archbishop, and all the nobility and gentry of the county as patrons and liberal subscribers) has remitted to the Central Association the large sum of 5,000l. The Press has very considerably and effectually aided the cause of the soldier's family; but no paper, either of daily or weekly circulation, has so practically assisted these poor people as *The London Journal*. The Editor of that paper, by the weekly issue of twelve supplements, at one halfpenny each, has realized the surprising sum of 1,424l., which has been paid in weekly instalments of 120l. Nothing proves so unambiguously as this does the sympathy of the poor, as the purchase of the Supplement was not compulsory on the subscribers to the paper.

Subscriptions have been received from all parts of the world; from Panama, Bahia, Bombay, Quebec, Nova Scotia, St. John's New Brunswick, Brussels, Van, Lausanne, Bonn, Paris, Calais, Calcutta, Ceylon, Montreal, Boulogne, the Black Sea Fleet, Bermuda, Fredericton, New Brunswick, &c. &c.

The generous sympathy of the Navy for the wives of the Army has been very gratifying; indeed the first person who

† One commanding officer who could not find amongst his soldiers' wives married with leave a sufficient number willing to embark with their husbands, and leave their families behind, was permitted by authority to complete the number by selections from the childless women married without leave, living out of barracks.

by an able letter in the *Times* requested the public to a sense of their neglect of the soldier's wife, was "A NAVY OFFICER."

But of all the subscriptions perhaps the most touching was that of the Chelsea Pensioners. One old veteran in paying his penny was heard to remark, "Had there been such an Association in my day, when I was away at the wars, my poor old woman would not have died in the workhouse." Several bodies of men of the working classes have agreed to send in weekly penny contributions; the men of Fricke's Patent Candle Factory and the men of the Great Locomotive Department have already paid in considerable sums collected in this way.

From several large towns considerable amounts have been remitted, from Walsall, Cheltenham, &c. &c.; but the town of Bath has exceeded them all by several hundred pounds.

#### THE RAILWAY COMPANIES—LYING-IN HOSPITALS.

So universal has been the sympathy displayed towards the poor people whom this Association has taken by the hand, that all the great Lines of Railway have been made free to the soldier's child. Particularly the London and North-Western, and the Portsmouth Line, where not only have the children been carried free of expense, but the extra weight of baggage of their poor mothers has not been charged for, an example which the Committee earnestly trust all the Railway Companies will universally follow.

Two Lying-In Hospitals in London,—the British Hospital, in Endell-street, and the Queen Charlotte's,—most generously opened their doors to the soldier's wife. Many a poor woman has had deep cause for thankfulness for the care taken of her at the British Lying-In Hospital in Endell-street.

Music, Poetry, and the Fine Arts have all been enlisted in this good cause. One simple poem by a child realized nearly 20l. for the Association; and the admirable Sketch by George Thomas, Esq., of the Soldier's "Separation from his Family," presented by that gentleman to the Committee of the Bath Fancy Fair, has done good service to the cause, —representing so truthfully as it does the reality of the distress which this Association is so effectually mitigating.

#### LOCAL COMMITTEES.

The assistance and practical working of the seventy-eight Local Committees all over the kingdom has been most invaluable. To the Clergy of the Church of England, the Staff Officers of Pensioners, the Garrison Chaplains, the Local Magistrates, and other benevolent persons, the Committee desire most cordially to tender their hearty thanks. Had it not been for the indefatigable exertions of the Senior Garrison Chaplain of Dublin, the Rev. Charles Hort, upwards of 400 women and 600 children would now have been the inmates of the workhouse, for in Ireland no out-door relief is granted. The Staff-Sergeants in the several districts have proved themselves worthy of the profection to which they are an honour; one fine fellow on being offered remuneration for the great trouble he had taken in relieving the poor soldiers' wives in his district, exclaimed, "GOD FORBID THAT I SHOULD TAKE ANY PAYMENT FOR HELPING MY COMRADES' WIVES AND FAMILIES IN THEIR DISTRESS." A perfectly organized system is now established by means of the Local Committees throughout the kingdom, quarterly statements are regularly transmitted, showing the number of women and children, and the expenditure; and regiments that began regimentally to distribute their own funds, have cordially handed over the balance of their funds to the Association, being satisfied with its working, and perfectly content to abide by its rules and regulations.

It is necessary to state, however, that the Association has not been permitted to relieve any but the widows and orphans of the Foot-Guards, the Officers commanding those regiments having funds of their own for the trade of their wives and families of their men, and not wishing to burden the Association.

Extract from the Report of the Limerick Local Committee:—

"Limerick, 28th August, 1854.

"We have 17 women married with leave on our list. It appears that the women married with leave have the heavier families.

"It is incontestable that the major part of the women relieved by this Committee would, ere this, have been in the workhouse, if they had not been aided.

"We can safely declare our conscientious belief, that the women on our list, 63 in number, have shown themselves deserving of the relief administered to them. We have never received a single complaint against one of them. They have universally manifested a desire to obtain work. Several of them have obtained situations as wet-nurses, a great fact in proof of the decent, healthy, and well-conditioned state of these individuals. Many are working at the shirt business for a mere trifle, to earn which they mix labour all day; and several are learning the trade of shirt-making without wages, in hopes of being able to assist themselves. Upon a fair review of their conduct and their general appearance, we can safely say that the women relieved by our Committee are creditable to the army. Even with the relief they receive, their position is far too trying a one to be anything but a warning, instead of an attraction to other females to enter into the same state, and we have advisedly given it as our opinion that the operations of this Committee are not calculated to create the mischief, which some imagine is likely to result from the charity and sympathy which have been evinced by the British public for the most unhappy class of women, suddenly deprived of the help of their husbands.

"R. P. DOUGLAS, Col., Assist. Adjt. Gen.  
"Chairman of Committee."

Extract from the Manchester and Salford Local Committee:—

"Salford Barracks, 29th August.  
"I send you a statement of a few cases, which strike me



as being unusually distressing. There are many nearly as bad, 140 in number. Very few of the women who have young children (and the children are nearly all too young to work) can earn anything worth noting, 2s. or 3s. a week at the most. Of course those who enjoy the privileges of living in barracks, &c., as being married with leave, are in the worst circumstances, and they suffer severely. They lose the lodging and advantages of fuel, company's and officers' washing, any 5s. or 6s. a week, and the assistance of their husband's pay. Lodging here of a very indifferent sort costs them 2s. and 3s. a week, and they will be far worse lodged than when in barracks. I send you the cases of four women, all married with leave, one with six children, another five, another four, another three; there are many others married with leave, having two or three children nearly as destitute. There is no employment that they are capable of, hampered as they are with young children, for whose care they must pay if they leave them at home and seek employment elsewhere.

"A. F. BOND, Major and Staff Officer."

*Extract from the Report of the Woolwich Local Committee:—*

"Woolwich Rectory, 4th September, 1854.  
"The women were left in very many cases, I am sure, in almost all, without any means for themselves and their children. Many were on the eve of confinement. Their only resource would have been to become paupers on the parish, and their only asylum would have been the workhouse. A generous provision on the part of a grateful country for the wives and families of those on whom they depended, under God, for a successful issue of the war in which we have been compelled to engage, has prevented this. I suppose this had not been the case. How hardly would the maintenance of so many have pressed upon the poor-rate payers! and in many instances how unfairly! Take Woolwich, for instance, and the case would be similar with respect to all garrison towns. We have upwards of 200 women, besides their children, to be maintained somehow. I think it quite possible that the burden would have been felt so heavily, that a memorial might have been sent to the Government. But however this might be, the expense would have been unfairly thrown upon parishes such as our own; but this is a trifling matter when compared with the pauperization of respectable wives of soldiers of our army."  
HENRY BROWN, Rector of Woolwich.

*Extract from the Report of the Dublin Local Committee:—*

"September 4th, 1854.  
"I find that since the 1st July to the 2nd instant, I have made about 3,400 payments (in small sums, varying from one shilling to one pound five shillings) to about 400 women, soldiers' wives. We have granted several women free passages to their friends and relatives, released clothes from pawn-offices for women going into situations, set up numbers in a small way of business, defrayed the funeral expenses of a few children, and in numberless other ways have been the means of conferring substantial benefits upon these poor people, &c. Had it not been for the small weekly payments, the majority would have been in the poor-house. Many women, although they only received 2s. 6d. a week, were thus kept going, and encouraged to work for themselves and children, &c."

"CHARLES HORT, Senior Garrison Chaplain, and Honorary Secretary to Committee."

*Extract from the Report of another Local Committee:—*

"We have hardly relieved any that were not married with leave and on the strength. By the timely aid rendered by your Society much distress was of course prevented, as, as soon as they were left, your excellent Society took them by the hand. But timely as this aid was offered, it was not before, in many cases, the poor creatures had passed nearly everything, EVERY IN TWO CASES TO THEIR WEDDING-RINGS. What would have been the condition of these poor creatures if no such Society as yours had existed! Many of them far too high-spirited to have become the inmates of a workhouse, would have been plunged into a state of misery fearful to contemplate. But even as it is, much misery is to be found. A poor delicate creature, with two children, married with leave, to whom your Society grants a weekly allowance, has been compelled to part with her furniture. So distressing is this woman's case, and so respectable a character does she appear to be, that some of the other women have helped her out of their own small pittance, &c. Every day I feel more thankful for the good your Society is doing; upwards of 30 are receiving help from you at this place. I only wish those who have contributed large sums to your Society could witness the gratitude of these poor women for the help they receive; they would indeed feel more than repaid for all they have done."

**SOLDIERS' WIVES AT VARNA.**

Mr. Ray, formerly the active and intelligent Inspecting Officer of this Association, writes from Varna to the following effect:—

"Varna, August 4th, 1854.  
"Sir,—I beg to draw your attention to the condition of the poor women here. Many of them have died, and others are dying; others, who are in a state of convalescence, are not able to proceed further with their Regiments, and the men are expected to leave this in about fourteen days; and these poor creatures, emaciated and dried with the sun, will be left in a foreign land without any protection or home whatever. What I thought of was, to provide a house and food for such as have none; most of them have blankets, but to encourage those who are able to get about to wait on the sick, cook, and wash. If your Committee is pleased

to approve of this plan, I shall be most happy to superintend the whole matter, and I am quite sure it would relieve many a poor man of intense anxiety. The cold weather will be soon setting in,—then what will these poor women do? If the ladies in England would send us a little flannel, a few blankets, and left-off garments, they would be rendering us a great service, &c. The great work that is going on for the wives and families of the soldiers by means of the Association in which you take so prominent and energetic a part, causes abundant joy to the husbands and fathers here; and when I remind them of what is doing, they seem overjoyed, and many thanks are expressed both to yourself, and the Committee, and benevolent friends, for the sympathy shown them. Numerous are the deaths from cholera and fevers, and doubtless many who are cared for by your Association are really widows, but news of the fact may not have reached them. They have not yet entered the field, but every day the order for embarkation for the Crimea is expected, where doubtless many will fall, and these poor fellows have their eyes upon your Association to protect their wives and children. I am happy to say I have been well received by the men generally; to point them to the 'Lamb of God that taketh away the sins of the world,' is my ostensible work, and to tell them of the great work going on in England for the good of those they have left behind, is in perfect keeping, it is indeed good news. The poor women who have followed their husbands to this place are in a most pitiable condition, and when the Expedition sails for the Crimea, they will be left here. Would that we had an Association here for these poor objects! Varna is in perfect confusion; how could it be otherwise with such a congregation of nations, fierce, wild, desperate-looking fellows, armed to the teeth, anxiously waiting for the signal to summon them to the fight? May you long be spared in your glorious work, of all works the most enviable, to care for the poor, &c. &c."

Immediately on the receipt of these letters the Committee met, and decided that a donation of blankets, shawls, &c. &c. should immediately be sent to Varna, and the sum of 100l. should be granted for the use of these women. On the 1st of September, goods to the amount of 34l. were sent by steamer to Constantinople, addressed to the care of the Consul-General, who was requested to use his discretion in forwarding them to Varna. A bill of exchange for 100l. was also sent to the same authority, with instructions and authority to Mr. Ray to act as the almoner of the Association.

Private letters received by the Committee fully corroborate the fact of the distress of these poor women, for though they receive what are called rations, no other female comforts can be provided for them.

**"Camp near Varna, August 24, 1854.**

"Dearest,—Yours dated August 3rd came to hand on the 16th. I have received all your letters, except one. You did tell me, my dear, that 7s. a week was what you received from the Association; and although that is a mere trifle in a place like London, yet we ought to be very thankful for it. You say you deeply regret you did not go with me; indeed, my dear wife, much as I desire to be with you, I think it *the most providential thing ever happened for you to be where you are, instead of being here; badly off as you are now, you would be utterly miserable here.* We have lost already two married men of cholera. I sleep in the staff tent ever since I got better of the cholera. Everything is enormously high here; a mouthful of white bread and cheese for supper costs 5d. One thing lately we can always get, a pint of ale for 2d. or porter 1d.; in fact, it is the only thing we relish; and the bread is very bad, and we get nothing but the nasty beef, which we cannot eat, but boil down and make soup of. I get, as I said before, 1s. 10d. a day pay. Out of this, 4d. is stopped for rations, and 2d. a day for mess money; so that by the time I pay for something fit to eat, there is not much left; still I shall, please God, send you all I can, &c. The women here have no way of making money by washing, the water is too far off, &c."

"I am sorry to say I have been very ill, and as it is far the best for me to let you know the whole truth, I must inform you that I have had the cholera; I was very bad while it lasted, but thank the God of all goodness for his great mercy, He has restored me. The doctors have been very kind indeed to me; everything I could wish for was got for me; almost all the officers and the Colonel came to me and inquired about me constantly. Poor L. M. J. M., and E., and Mrs. L., have all died since my last; also J. R. and S. F. Indeed, my dearest wife, I rely in perfect confidence in my Redeemer, and feel myself quite unworthy of His mercy; and during the worst of my illness, I felt humbled before Him in whom alone my salvation is sure."

"Your ever-loving husband,

"E. R."

The wife of the writer of this letter (a most excellent non-commissioned officer) was left nearly destitute with five young children. She bears a most irreproachable character, and is most anxious to exert herself to obtain her own livelihood; but what can she do with five young children? Her two eldest girls are entirely provided for by the Association, and she receives a weekly allowance of 7s.

The Committee perceive with pleasure that the authorities are gradually sending them home from the East. Three arrivals of soldiers' families have already been brought before the Committee, for no sooner do they land than they apply to the Association, and it is needless to add how readily their application is always responded to.

**WIDOWS AND ORPHANS.**

The first efforts of this Association were limited to the immediate relief of the Wives of Soldiers ordered on active service, who, in consequence of their having families, were

left behind, utterly destitute of all means of existence, save the temporary out-door parish relief. Since that time the sword and the pestilence have too fatally done their sad work, and many of these poor people have become more hopelessly destitute by the death of their husbands.

The Committee, however, encouraged by the magnificent contributions received from all parts of the world, have found themselves in a position to make the following scale of donations for Widows, which is the same that was adopted by the administrators of the Waterloo Fund, in 1815:—

Unanimously resolved,—*"That relief in the shape of a donation not exceeding the undermentioned sums, being the same as agreed to by the Waterloo Committee on the 28th of June, 1815, be adopted as a scale for the Widows of non-commissioned Officers and Soldiers now serving against Russia."*

*"A Pension may be granted, in the place of the whole or part of such Donation, should it appear expedient to the Committee."*

*Scale of Donation for Widows and Children dependent for Support.*

Rank.	Without Children.	One.	Two.	Three.	Four.	Five.	Six.	Seven.	Eight.
Serjeant-Major	£ 50	100	115	125	135	150	160	175	200
Serjeant	£ 60	80	90	100	105	120	130	140	160
Corporal	£ 45	60	70	75	80	90	100	110	120
Drummer	£ 35	45	50	55	60	65	75	80	90
Private	£ 30	40	45	50	55	60	65	70	80

Of Widows, the Association has already 64 on their books, and of Orphans, 108.

The following letter shows that for the Widows of those brave men who perished with their Colonel in the Europa transport, ample provision was made, and that the measures adopted for their relief have fully satisfied the officer commanding the depot of the Enniskillenists:—

"Canterbury Barracks, July 13th, 1854.

"Sir,—I have the honour to acknowledge, with many thanks, the receipt of your memorandum, detailing the amount of the donations granted by the Association of which you are the Honorary Secretary, to the widows and orphans of the five non-commissioned officers and men of the Enniskillen Dragoons who were lost in the Europa transport."

"The ready and liberal aid thus sent to their relief, will, I trust, be effectual to alleviate in some degree their distress; and it marks, too, in a way for which I am most grateful, how deeply the Committee of your admirable Association appreciate the bravery and noble conduct of those who stood by their Colonel to the last."

"Sure I am, from private accounts which I have received, that had all on board done their duty as manfully as those who perished, there would not have been a life lost in the Europa."

"I have not failed to communicate to the officer commanding the regiment in Turkey the liberality with which the Association have met my application for assistance to the surviving families by a grant of 415s."

"I am glad, too, to express my sense of the admirable arrangements of the Society, by which the distribution of this sum has been entrusted to the persons best able to judge of the most judicious means of administering, in each individual case, to the permanent relief of the sufferers."

"I have the honour to be, Sir, your obedient Servant,

"F. W. FITZ-GERARD, Captain,

"Commanding Depot Enniskillen Dragoons."

"Major Hon. H. L. Powys, Hon. Sec."

Case 1,540, W.T.—A boy of the 33rd Regiment, whose father and mother both died of cholera in Turkey; a most distressing case. A weekly allowance granted to the orphan's grandfather, with whom the boy was left.

For the five widows and children of the 6th Enniskillenists, annuities have been purchased, large sums having been subscribed for them in addition to the grant from this Association; the amount will render them independent for their lives.

For the other widows, donations, varying from 5l. to 10l., have been granted immediately on the receipt of official notification of their husbands' death. Most of them were already on the books of the Association, and had been receiving relief for some time: it is proposed to grant them an annual pension as long as they remain Widows, and the resources of the Association continue available.

**CONCLUDING REMARKS.**

Effectually to prevent the recurrence of such distressing scenes as those which gave rise to the formation of this Association, the Committee have had in consideration a plan which it is hoped might tend materially to raise the condition of the soldier's wife, and secure a provision for the soldier's widow.

As there is no probability, under existing circumstances, of so raising the pay of the soldier as to enable him when married to apportion a sufficient share of it to his family while he is on active service, the Committee are of opinion, that a National Fund should be established, of which the invested capital of this Association shall be the foundation, and to which the public and the soldier shall be invited to subscribe annually.

This fund to provide pensions for widows and orphans, as well as temporary assistance to wife and family, who, having become subscribers, may be ordered on active service.

The exact subscription which the soldier would be called

upon to pay, must depend on the amount of public support the National Fund may receive,—it must always be a very small sum from the soldier; but the Committee are convinced that the country will approve of this proposed attempt to encourage habits of obedience and prudent foresight amongst the married soldiers of the British Army.

By order of the Committee,  
HENRY LITTLETON POWYS,  
Major 60th Royal Rifles, Hon. Sec.  
September 7th, 1854.

BALANCE SHEET to September 7, 1854.

DEBITOR.

Sept. 7, 1854.  
To Amount of Subscriptions received in the Half-year, ending 7th of September 1854, from the formation of this Association on the 7th of March ..... £80,269 17 7

CREDITOR.

Sept. 7, 1854.  
By Exchange Bills deposited in the Bank of England in the names of the Trustees (viz.), Sir John Kirkland, Lord Henry Cholmondeley, M.P., and Major the Hon. H. L. Powys ..... 65,365 9 4  
(Of which £50,000 will be applied to relieve Widows and Orphans.)  
By Relief, distributed through Local Associations ..... 5,339 14 4  
By ditto, distributed at Head Office in London ..... 1,180 19 0  
By ditto, distributed through Clergymen, Magistrates, and others ..... 2,631 7 5  
By Advertisements ..... 1,792 12 2  
By Office Expenses, Printing, Stationery, Wages, Rent, &c. .... 718 19 3  
By Payments to the Sailors' Association .. 106 0 10  
By Balance (viz.)—In the hands of the Honorary Secretary ..... £ 311 9 3  
At Bankers, 7th Sept. 1854 .. 2,603 6 0  
2,914 15 3  
£80,269 17 7

These Accounts Examined and Audited,  
GEORGE WM. BELL,  
Auditor to the Association.

"INGESTRE," Chairman.  
JOHN LETSOM ELLIOT, } Members of the  
HENRY LITTLETON POWYS, } Finance Committee.

Thus it will be seen that the sum of £9,179 have already been spent in actual relief for Widows, as well as Wives, within the space of six months; and that at the trifling outlay of a little more than 3 per cent. the sum of £80,269 17s. 7d. has been raised.

Annual subscriptions are solicited towards the formation of a National Fund for Widows and Orphans.

H. L. POWYS, Major, 60th Rifles,  
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By order of the Board,  
**WILLIAM CHAPMAN**, Secretary.  
London, 21, Old Broad-street, Sept. 8, 1854.

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